



Cloud repatriation: What lies behind the hype?

*A business guide to re-thinking
cloud strategy*

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Foreword

37Signals' Move: A Call to Reassess Cloud Deployment

Cloud computing has been one of the most significant technological trends of the past decade, offering businesses of all sizes the ability to access unprecedented computing power and scalability. However, some companies are starting to question whether the cloud is the best option for their needs, leading to a growing trend of cloud repatriation.

In October 2022, David Heinemeier Hansson, the co-founder of 37Signals, wrote a blog post titled "Why We're Leaving the Cloud," which reignited the discussion of cloud repatriation. In March, 37Signals set a goal on a total cloud exit by the end of the summer. He just announced in April that Basecamp Classic is back on their own collocated hardware, taking less than seven months to move the complex application used by 3.5 million users.



The exorbitant cost of their cloud bill was the primary relocation impetus. In 2022, 37Signals spent \$3.2 million on the cloud. Just under a million of the spending covers storage of eight petabytes of files that remain with AWS for now. This leaves ~\$2.3m for everything else. In round numbers, after buying hardware, power, bandwidth, the team to run it, and colocation space, 37Signals anticipates saving \$7M over a 5-year period.

They've also gained much faster hardware and more cores – leading to improved performance. The median request now runs in just 19ms, compared to 67ms before. The mean request is 95ms vs 138ms, and the median query time has dropped in half. Basecamp Classic was no slouch in the cloud before, but now 95% of all requests are below the “magic” 300ms cut-off.

While 37 Signals is, in many ways, atypical relative to their cloud spend, their reasoning and data offer a noteworthy reference point. The announcement of 37Signals' successful move is a wake-up call for organizations to assess their cloud spend. It also inspired us at TRG Data Centers to deeply consider the topic. In this paper, we explore the topic of cloud repatriation and argue that framing it as a simple "yes or no" question misses the complexity and nuance involved in workload deployment decisions. If you would like to further explore the ideas discussed in this document, reach out to me on LinkedIn.

Sincerely,

Chris Hinkle

President TRG Datacenters



Cloud Repatriation: What Lies Beyond the Hype?

Rethinking the Rush to the Cloud

The topic of application repatriation, which involves bringing data and applications from the cloud back to traditional enterprise or colocation data centers, has gained significant attention in recent years. According to a 2021 article by Andreessen Horowitz,¹ there is a \$100 billion market value gap across the top fifty cloud-invested public software companies due to public cloud usage affecting their margins. Additionally, an F5 2022 report found that a combined total of 37% of organizations surveyed had repatriated apps and another 30% were planning to, up from only 13% and 14% respectively in the previous year.² It is clear that companies are starting to realize the drawbacks of a “cloud-first” or “cloud-only” mindset, and are seeking alternatives that can offer greater fiscal responsibility and application optimization.

While many organizations may be hesitant to move applications back to a data center due to the risk, cost, and time involved, it's becoming increasingly clear that it's time to reframe the conversation from cloud or application repatriation to one that strategically considers case-by-case which workloads to place where.



Key Points for Reflection

- Are you spending money on public cloud capacity your team **IS NOT USING**?
- Are the current **CLOUD COSTS CONSIDERABLY HIGHER** than what you expected before the migration?
- Is the level of control and visibility over your infrastructure and data in the cloud **MEETING YOUR BUSINESS REQUIREMENTS**?
- Are you facing **CHALLENGES WITH DATA SOVEREIGNTY** and need to ensure your data resides within specific geographic boundaries?
- Are you experiencing significant fluctuations in demand for your application, making it **DIFFICULT TO OPTIMIZE COSTS** in the public cloud?
- Are you encountering **UNEXPECTED DATA TRANSFER OR EGRESS FEES** that are impacting your budget?
- Are you facing **CHALLENGES WITH APPLICATION PERFORMANCE** to network latency or other connectivity issues?
- Do you need to comply with **INDUSTRY-SPECIFIC REGULATIONS** and find it challenging to meet those requirements in the public cloud?
- Do you have in-house expertise or the capability to **BUILD AND MANAGE** an on-premises server room or data center?

¹ <https://a16z.com/2021/05/27/cost-of-cloud-paradox-market-cap-cloud-lifecycle-scale-growth-repatriation-optimization/>

² <https://webobjects2.cdw.com/is/content/CDW/cdw/on-domain-cdw/brands/f5/state-of-application-strategy-report.pdf>



The Freedom of Optimal Deployment

As businesses have gained unprecedented freedom and a wide range of options for workload deployment, they are no longer constrained by IT limitations, they can now place their workloads where they best fit based on their unique business priorities.

| | |
|----------------------------|--|
| On-premises | the entire IT infrastructure is found within the physical premises of an organization. |
| Private cloud | the cloud infrastructure is run exclusively for an organization and may be collocated. |
| Public cloud | the cloud infrastructure is owned and operated by a third-party cloud service provider and made available to the public over the internet. |
| Hybrid cloud | an organization uses a combination of two or more different deployment models, such as collocated private and public cloud. |
| Multi-cloud | an organization uses multiple cloud providers for different workloads or applications. |
| Hybrid multi-cloud | an organization uses the private cloud(s) along with multiple public clouds. |
| Community cloud | the cloud infrastructure is shared among several organizations with similar requirements and concerns, such as security or compliance. |
| Fully managed cloud | outsourcing IT infrastructure and cloud management and support to a specialized service provider. |

Currently, 12% of respondents have adopted a hybrid, multi-cloud model, and it is projected to triple to 38% by the end of the year³, becoming the predominant model within a few years.

Colocation adds an extra layer of flexibility to the mix, where "on-prem" can mean your own data center or a colocation facility. With colocation, a business rents space in a data center to host their IT infrastructure. This allows them to keep physical control over their equipment while the data center supplies power, cooling, physical security, and network connectivity. The colocation industry has undergone a significant evolution over the past 10-15 years, positioning it as a compelling choice for businesses today. Colocation facilities now offer economies of scale, operational excellence, and substantial capacity making it a scalable, secure, and cost-effective solution for organizations seeking to rehouse their IT infrastructure.

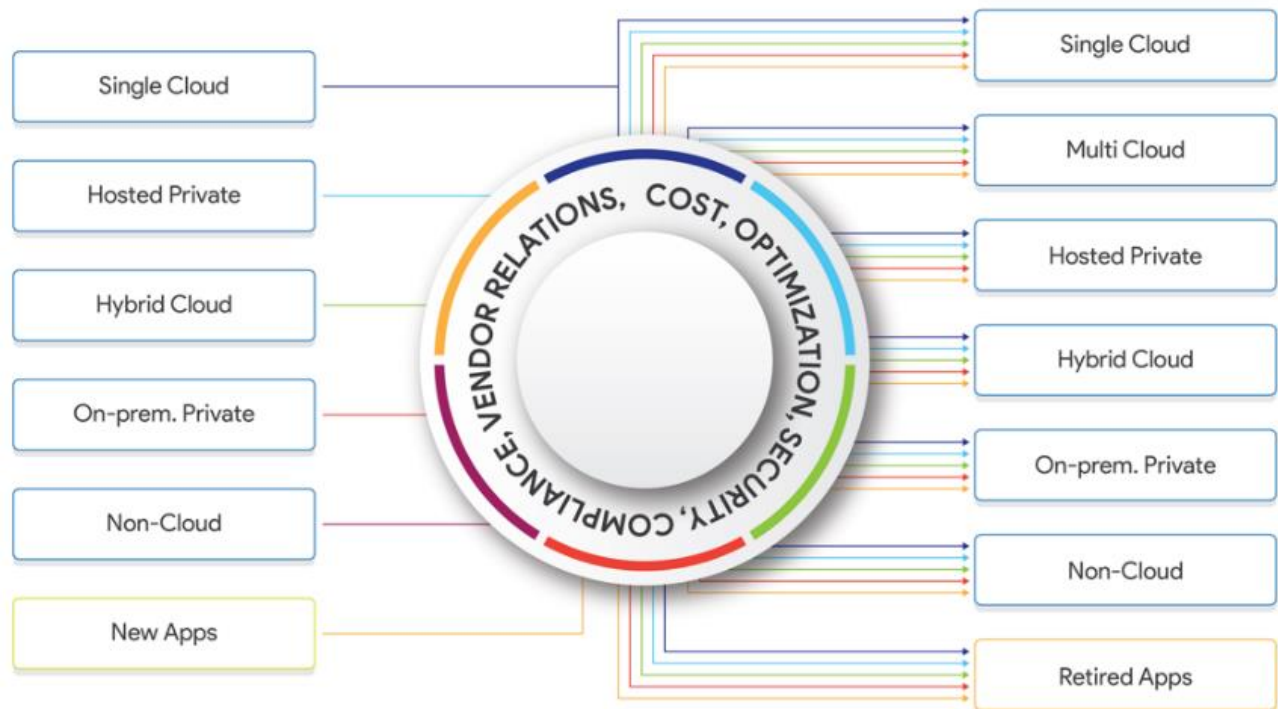
Colocation providers also often offer managed services, which can reduce the burden of maintenance and management for businesses. In situations where companies are considering repatriating their applications but no longer have the resources or skills or interest to manage a data center, colocation can be a compelling alternative that offers the benefits of an on-premises deployment model and many of the benefits of the public cloud without the cost.

³ <https://www.factioninc.com/blog/hybrid-multi-cloud/multi-cloud-trends/>



This freedom comes with a challenge: there is no one-size-fits-all solution. To find the best deployment model, companies must evaluate their infrastructure requirements on a workload-by-workload basis.

OPTIMAL WORKLOAD DEPLOYMENT



Factors Influencing the Repatriation Decision: Beyond Cost

To optimize workload deployment, businesses need to assess a variety of factors in addition to cost. By evaluating each workload across this matrix, businesses can ensure that their deployment model results in the highest possible business value.

For many organizations cost is not the sole or even leading factor in a repatriation decision. A 2022 report found that 41% of organizations that had moved applications to a new IT environment did so for security reasons, while 38% wanted to gain greater control over their applications.⁴ Other organizations site performance optimization. Furthermore, the same report found that one-third of organizations cited two or more reasons for the rollback, and 12% cited three or more reasons. By evaluating each workload across this matrix, businesses can ensure that their deployment model results in the highest possible business value.

⁴ <https://www.nutanix.com/enterprise-cloud-index>



The Colossal Cost of Cloud Computing

The same report nearly half of respondents plan to repatriate some applications to on-premises datacenters to mitigate cloud costs – making it the top repatriation motivator. While the public cloud market is predicted to continue to grow rapidly in the coming years, the costs associated with using these services can be prohibitive, particularly as organizations scale up their usage as illustrated by the 37Signals story in the foreword.

According to Gartner, worldwide end-user spending on public cloud services is projected to grow by 20.7% from \$490.3 billion in 2022 to \$597.1 billion in 2023.⁵

The Boardroom is Paying Attention

An overwhelming 73% of respondents consider cloud costs to be a matter for the C-suite or board-level executives.⁶ Which shouldn't be surprising given the current economic situation and the startling increase in the cost of the cloud to organizations. Cloud infrastructure spend went from an average of 2.3% of the total IT operational budget in 2021 to 5.7% in 2022⁷ while Gartner estimates 41% of the enterprise IT budget is spent on the public cloud. By 2025, that rises to 51% of total IT spend.⁸



**70% OF COMPANIES
AREN'T SURE WHAT THEY
SPEND THEIR CLOUD
BUDGET ON**

For software-based businesses, public cloud spending is even more shocking. It can be a sizable part of their cost of revenue (COR), with some organizations spending up to 50% of their COR on public cloud infrastructure.⁹ Reducing these costs by 50% can dramatically increase the valuation of these businesses, putting significant pressure on IT teams to repatriate workloads.

Financial Viability at Stake

Illustrating this, **Ahrefs an SEO software suite**, claims to have saved \$400 million by not going to the cloud, and even questioned their ability to exist in the public cloud.¹⁰ Ahrefs is a private company and therefore not bound to show its financial data but pulled from revenue figures published for 2020 and 2021 in The Straits Times. By linearly extrapolating the revenue, they calculated that Ahrefs' total revenue for the last three years was approximately \$257 million. The estimated AWS costs for a data center replacement would have been around

⁵ <https://www.gartner.com/en/newsroom/press-releases/2022-10-31-gartner-forecasts-worldwide-public-cloud-end-user-spending-to-reach-nearly-600-billion-in-2023>

⁶ <https://www.cloudzero.com/state-of-cloud-cost-intelligence?hsCtaTracking=92e38ba8-5fbb-4657-907d-ec17d7e9d92d%7C91077e82-37e3-4533-8986-bc9865332214>

⁷ https://www.prweb.com/releases/it_budgets_surge_despite_choppy_economic_waters_avasant_study_finds/prweb18802551.htm

⁸ <https://www.gartner.com/en/newsroom/press-releases/2022-02-09-gartner-says-more-than-half-of-enterprise-it-spending>

⁹ <https://a16z.com/2021/05/27/cost-of-cloud-paradox-market-cap-cloud-lifecycle-scale-growth-repatriation-optimization/>

¹⁰ <https://tech.ahrefs.com/how-ahrefs-saved-us-400m-in-3-years-by-not-going-to-the-cloud-8939dd930af8>



\$448 million, which is beyond the company's revenue. Based on this calculation, Ahrefs would not have been profitable, and likely their products would not have existed if they had relied entirely on the public cloud.

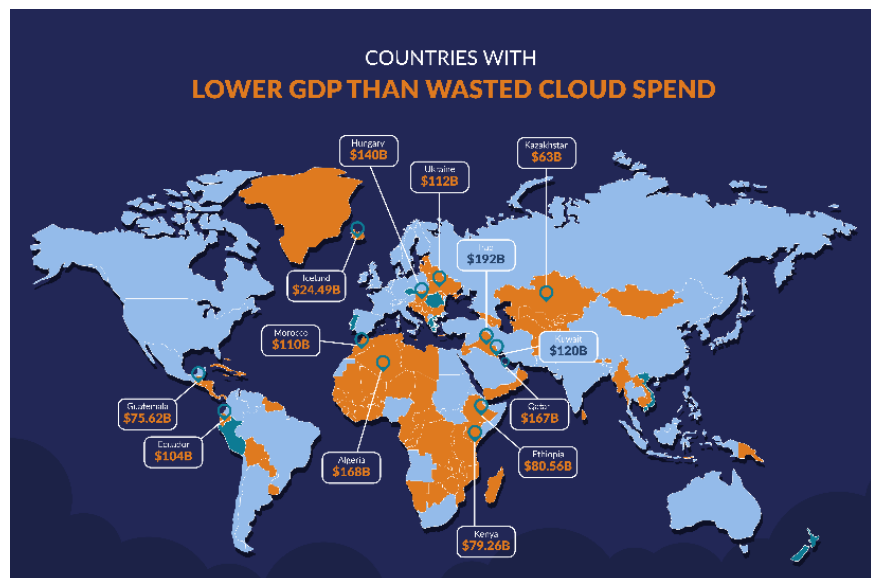
Further, the study by venture capitalist Andreessen Horowitz has become an essential reference in any analysis of cloud repatriation. **Datadog**, an infrastructure monitoring as a service company, is a prime example, as it was trading at nearly forty times its estimated gross profit for 2021 when the study was published. In their S-1, the company showed an aggregate \$225M 3-year commitment to AWS. Annualizing the committed spend to AWS of \$75M and assume that 50% or \$37.5M of this may be recovered via cloud repatriation, this translates to roughly \$1.5B of market capitalization for the company on committed spend reductions alone.¹¹

Overall, the financial viability of relying solely on public cloud infrastructure can be a risky proposition for some companies, as demonstrated by the examples of Ahrefs and Datadog and an opportunity for improved profitability for others. Therefore, it is prudent for companies to undertake thoughtful consideration of the potential cost savings and benefits of cloud repatriation across their application portfolio.

Cloud Waste Crisis: Billions Lost

Even more alarming is the fact that organizations waste a substantial portion of their cloud spend—94% of organizations say they are wasting money in the cloud.¹² Similarly, Flexera's latest State of the Cloud survey, organization report that **32% of cloud spending is wasted**, up from 30% the previous year.¹³ Using Gartner's \$597.1 billion 2023 estimate, or some \$192 billion wasted on public cloud resources. Continuation at the same rate in 2024 brings waste to over \$231 billion.

The lack of visibility into cloud spend is at the heart of the problem. A recent study by Cloud Zero found that only three out of ten organizations have complete visibility into their cloud usage and costs,¹⁴ which means that most companies are flying blind when it comes to understanding where their cloud costs are going. Without this critical information, it's impossible for organizations to effectively manage their cloud budgets and optimize their spending.



With total cloud spend at approximately \$600B, wasted cloud spend is higher than the annual GDP of nearly two-thirds of the world's countries.

¹¹ <https://a16z.com/2021/05/27/cost-of-cloud-paradox-market-cap-cloud-lifecycle-scale-growth-repatriation-optimization/>

¹² <https://www.hashicorp.com/state-of-the-cloud>

¹³ <https://info.flexera.com/CM-REPORT-State-of-the-Cloud>

¹⁴ <https://www.cloudzero.com/blog/cloud-computing-statistics>



Cloud Spend in a Non-Zero Interest Rate Economy

As interest rates hover around 8% and the era of zero interest rates comes to an end, organizations find themselves compelled to reassess their cloud spend strategies and consider repatriation as a strategic move. The shift in the economic landscape prompts a renewed focus on traditional financial concepts such as cost of plant, depreciation, and return on investment, leading CFOs to prioritize cost control and capital management.

While the OpEx model of cloud computing has revolutionized operations for many organizations, the changing interest rate environment calls for alternatives that enable repatriation and cost control. Previously, the migration to the cloud brought accounting advantages by transitioning from capital expenditures (CapEx) to operating expenses (OpEx). However, in a non-zero interest rate environment, reversing this trend can prove beneficial.

Repatriating applications and leveraging internal software usage allow companies to include hardware as assets on their books, treating cloud costs as capital expenses (CapEx) rather than operating expenses (OpEx). This accounting practice ensures a more accurate valuation against earnings, enhances financial reporting accuracy, and strengthens the overall financial position. Moreover, it facilitates capital preservation by redirecting resources from continuous cloud service payments to alternative investment opportunities with higher returns.

In this evolving economic landscape, companies considering the repatriation of applications from the public cloud also need to consider cloudflation. Cloudflation is a term gaining traction in the industry, referring to the rise in cloud services costs due to inflation in the economy. This phenomenon has become increasingly prominent over the past months, driven by several factors.

One of the reasons behind cloudflation is the supply chain shortages caused by the pandemic, particularly the reduced access to semiconductors. This shortage has created a scarcity of servers just when the demand for storage is exponentially increasing. Additionally, rising energy costs contribute to the upward pressure on cloud services prices. Geopolitical tensions further compound the situation, with events like the invasion of Ukraine by Russia and the ongoing conflicts between the US and China. Taiwan, one of the leading producers of semiconductor chips, becomes a focal point as it plays a significant role in the global chip market. **None of these factors appear to be changing soon**, as a result, the likelihood of ongoing cost increases remains high.

The impacts of cloudflation are reflected in rising prices across the industry. For example, cloud service providers like Google recently announced substantial increases in cloud storage costs, with notable hikes of 25 to 50 percent.¹⁵ Operations costs, including API calls to the storage data plane, have witnessed even more staggering increases of 100 to 400 percent.

¹⁵ <https://tdwi.org/articles/2022/07/13/ppm-all-why-cloud-expenses-are-rising-cloud-flation.aspx>



Amidst these considerations, organizations are exploring new ways to treat cloud costs as capital expenses (CapEx) instead of operating expenses (OpEx). By doing so, they can navigate the evolving economic landscape with greater financial control and optimization. This shift requires careful evaluation and consideration of factors such as federal income tax implications and regulatory constraints depending on the industry.

Companies have the option to use cloud services and capitalize expenses, with key distinguishing criteria including sole use, right to control, and meaningful penalties for early termination. As the price of storage and hardware continues to drop, it becomes increasingly possible to use modern hardware and software solutions to build highly efficient and cost-effective on-premises infrastructure that meets their needs without the prohibitive costs associated with cloud computing.

For instance, a comparative cost analysis was conducted for a **British Petroleum subsidiary**, focusing on a High-Performance Computing deployment for analyzing seismic processing data related to well-digging. The company explored two options: leasing approximately five hyperscale racks at a colocation facility or utilizing cloud-based resources. The intended usage involved running the system for one week of intense processing calculations, followed by a month-long gap until the next batch. After careful evaluation, it was determined that the cost of compute resources needed for one week of calculations in a public cloud environment equaled the expense of purchasing the required equipment and subsequently reselling it after the month-long period.

In summary, in a non-zero interest rate economy, repatriating select applications from the public cloud offers substantial financial benefits. By including hardware as assets, improving financial reporting accuracy, preserving capital, and exploring alternative investment opportunities, companies can navigate the evolving economic landscape with greater financial control and optimization. The consideration of capital expenditures (CapEx) versus operating expenses (OpEx) opens new possibilities for organizations to strike a balance between financial efficiency and strategic cloud utilization.

How High Costs Stifle Creativity

The increasing costs of cloud computing can also have hidden and admittedly difficult to measure costs as well. A McKinsey' study finds that 75% of the cloud's value comes from innovation-driven growth, estimated at \$770 billion.¹⁶ However, the increasing costs of cloud computing can hinder innovation and engineering efforts within organizations, as IT teams must cut back on development and innovation budgets to compensate for over budget spend. The negative impact on creativity and experimentation can create a culture of risk aversion, limiting the organization's ability to stay competitive. Responsibly repatriating apps that don't or no longer belong in the cloud helps keep costs down and enables organizations to allocate their cloud spend towards its true strength — driving innovation.

¹⁶ <https://www.forbes.com/sites/forbestechcouncil/2021/05/24/realizing-the-true-value-of-the-cloud-as-an-innovation-catalyst/>



The Mounting Data Challenge

While cloud computing has revolutionized data storage and accessibility for businesses, it has also introduced significant challenges, particularly when it comes to data management. Organizations frequently grapple with the lack of visibility, cost, and control over their data in the public cloud environment. As a response to these challenges, application and data repatriation emerges as a strategic consideration to regain control and optimize costs.

The growth of data exacerbates the challenge further, as businesses face the monumental task of storing and managing ever-expanding volumes of information. This strains the IT budget, particularly as cloud-based options often prove more expensive than on-site data hosting. Effective data lifecycle management is crucial for cost control. However, many businesses lack adequate policies for data deletion and management. This results in the accumulation of non-business-critical data, leading to unnecessary storage expenses and decreased efficiency.

In addition, many organizations operate in complex multi-cloud environments, utilizing various infrastructure-as-a-service/platform-as-a-service (IaaS/PaaS) platforms and software-as-a-service (SaaS) providers. This multi-cloud approach introduces layers of complexity in integrating and managing data from diverse sources. As a result, organizations often struggle to maintain clear visibility and control over the location of their data, which can be dispersed across multiple repositories and silos. This lack of centralized oversight can lead to challenges in data governance, data security, and regulatory compliance.

To address these complexities and mitigate the risks associated with data fragmentation and potential shadow spending, organizations require robust data management strategies. Moreover, they must carefully consider application and data repatriation as a fundamental part of their data management approach. Repatriation allows organizations to regain control over their data and optimize costs by bringing the data closer to their core infrastructure.

By repatriating applications and data, organizations can establish a more centralized data management approach. This facilitates improved visibility, control, and governance over their data assets. Repatriation also enables organizations to streamline their data infrastructure, reducing costs associated with storage and ensuring optimal utilization of resources. Additionally, it simplifies compliance efforts and enhances data security by consolidating data within trusted on-premises or private cloud environments.

The Explosive Growth of Data

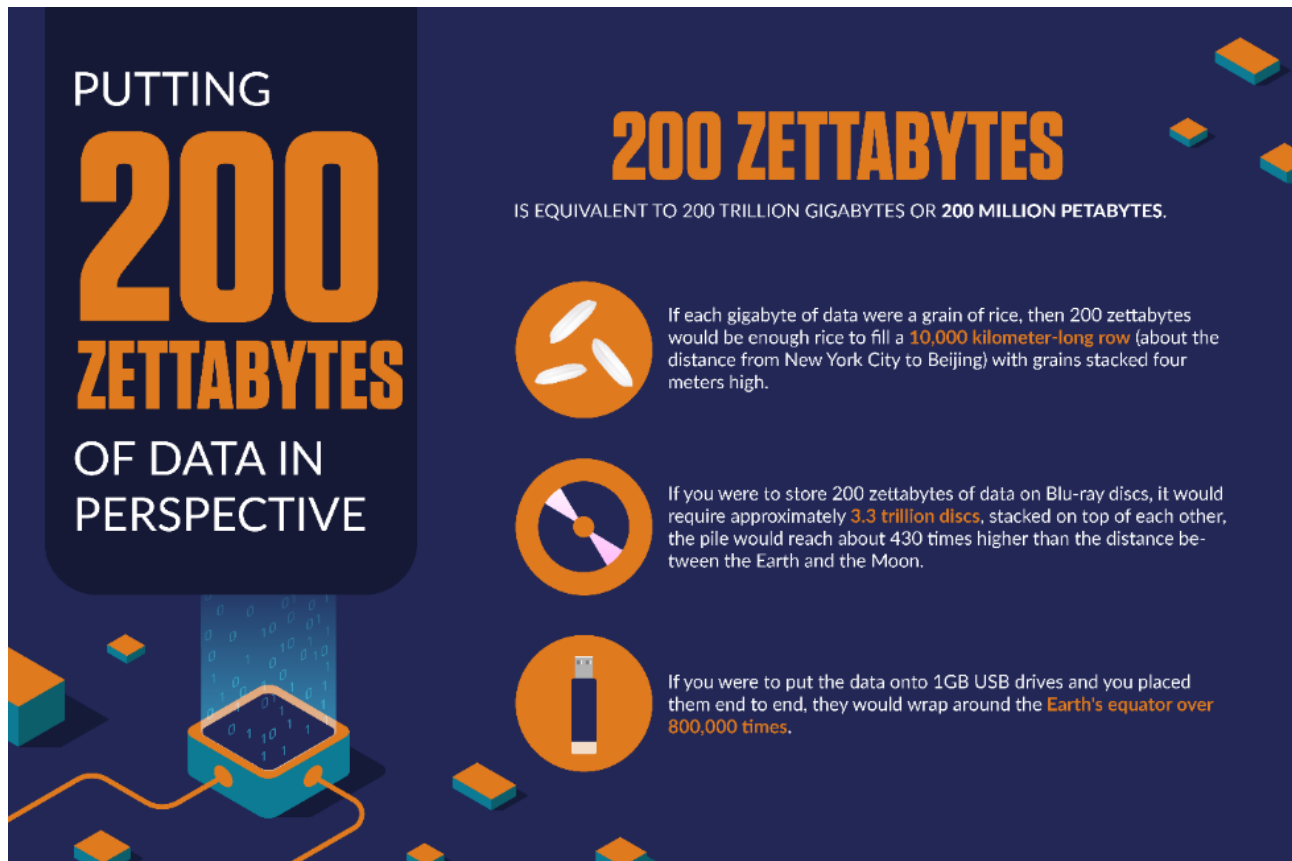
The amount of data generated is growing at an unprecedented rate, with 90% of the world's data created in the last two years alone.



- By 2025, it is estimated that there will be over 200 zettabytes of data stored in the cloud around the globe.¹⁷
- Stored data grows 5x faster than the world economy.¹⁸
- The installed base of storage capacity is forecast to increase, growing at a compound annual growth rate of 19.2% over the forecast period from 2020 to 2025.¹⁹
- According to IDC, the enterprise datasphere will grow two times faster than the consumer environment over the next five years due to the increasing role of the cloud for storage and consumption.²⁰

Storing and maintaining these data troves can eat up between 15 and 20% of the average IT budget, and on average, cloud-based options *cost twice as much* for usage as on-site data hosting, even when accounting for overhead like data center space, power, staffing, and hardware.²¹

Big Data, Big Chaos



¹⁷ <https://www.archive360.com/blog/data-minimization-a-key-requirement-for-effective-cybersecurity#:~:text=It%20is%20estimated%20that%20by, and%2044%20ZB%20by%202020.>

¹⁸ <https://www.dihuni.com/2020/04/10/every-day-big-data-statistics-2-5-quintillion-bytes-of-data-created-daily/>

¹⁹ <https://www.idc.com/getdoc.jsp?containerId=US49018922>

²⁰ <https://www.idc.com/getdoc.jsp?containerId=US49018922>

²¹ <https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/reducing-data-costs-without-jeopardizing-growth>



Most organizations now use multiple infrastructure-as-a-service/platform-as-a-service (IaaS/PaaS) platforms to store their sensitive data with 80% of organizations now identifying as multi-cloud. Similarly, they subscribe to various providers SaaS, providers [130+ on average in 2023],²² some of which may be hosted by the SaaS provider, while others are rebranded and hosted by a major cloud provider like AWS or Azure. Cloud complexity is compounded by incorporating added services such as function-as-a-service and data lake providers. Moreover, hybrid environments often require connecting data sources used by business partners.



THE BANK SAVED
MORE THAN \$400
MILLION – A FULL
20% – IN ANNUAL
DATA COSTS

It's no wonder most organizations don't confidently know where their data is located.

For instance, a major global bank had to grapple with more than six hundred data repositories spread out across multiple silos. Managing these repositories cost the bank \$2 billion annually. The bank realized that this approach was unsustainable and formed an enterprise data-architecture team including the CIO and relevant business leaders. Together, they devised a plan to simplify the data environment by merging it into forty unique domains and standardizing "golden source" repositories. This strategy allowed the bank to reduce the number of data repositories, place them optimally, and even decommission some entirely. As a result of this streamlining effort, the bank saved more than \$400 million – a full 20% - in annual data costs while also enhancing data quality.²³

Planning for Petabyte-Scale Data Storage

With cloud data storage is expected to grow at an astonishing 22% annually, and the amount of data now doubling every four years.²⁴ This presents a significant challenge for businesses, which now need to plan for petabyte-scale data storage that outstrips IT budgets.

The absence of data governance, specifically lifecycle management policies, worsens the exorbitant expense of data storage. According to the Veritas Global Databerg Report, 52% of data organizational is unclassified (dark) and another 33% of data is considered redundant, obsolete, or trivial (ROT) and is **known to be useless**²⁵ — meaning that 85% of a company's data is not business-critical and can be erased without consequence.²⁶

The cost of data storage is staggering, and the costs keep climbing with no end in sight. In fact, some companies are now spending up to twice as much on cloud services as they were before they migrated their workloads from on-prem systems, and most organizations spent more than they budgeted for public cloud storage in 2022.

Machine learning (ML) and artificial intelligence (AI) are becoming increasingly important for enterprises, and they are also major drivers of cloud storage growth. With organizations collecting and processing enormous

²² <https://www.vendr.com/blog/saas-statistics>

²³ <https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/reducing-data-costs-without-jeopardizing-growth>

²⁴ <https://www.idc.com/getdoc.jsp?containerid=prUS49426222>

²⁵ [https://d.docs.live.net/0ad95b74ee708d8e/Tailspinners/TRG_Sam/Additionally, another 33%25 of data is considered redundant, obsolete, or trivial \(ROT\) and is known to be useless.](https://d.docs.live.net/0ad95b74ee708d8e/Tailspinners/TRG_Sam/Additionally, another 33%25 of data is considered redundant, obsolete, or trivial (ROT) and is known to be useless.)

²⁶ <https://www.veritas.com/resources/dark-data>



amounts of data to train their algorithms, cloud providers see a surge in demand for their storage services. However, while the cloud can offer benefits such as scalability and flexibility for data-intensive workloads, it's important for enterprises to carefully consider the cost and value of storing data in the cloud versus on-premises. For example, **Nvidia** recently claimed that moving large, specialized AI and ML workloads back on premises can yield a 30% savings, highlighting the potential benefits of repatriation in certain cases.²⁷



Tackling Data Sprawl with a Hybrid Approach

A hybrid model, which involves repatriating data to the data center while keeping the compute in the cloud, presents a practical solution to controlling the rising costs of data storage without compromising the scalability and flexibility of cloud computing. Storage vendor **Seagate** experienced this first-hand when they moved to Amazon Web Services (AWS) as part of a data consolidation plan.

While recognizing the benefits of elastic computing for business apps, they eventually brought back a big data system after the costs of moving the vast amounts of data generated far exceed the costs of running the system in-house. Although Seagate was only ingesting a part of their data into their Hadoop Data Lake, the bill to shuttle the data between their seven factories across three continents would have totaled millions of dollars each year. Once Seagate repatriated the data, they were able to reduce spend by as much as 25 percent.²⁸

In addition to the cost implications of data sprawl, there are also security and compliance concerns. If a company lacks visibility into where its data is stored and who is accessing it, it becomes difficult to ensure that proper security measures are in place.

²⁷ <https://techcrunch.com/2023/03/20/the-cloud-backlash-has-begun-why-big-data-is-pulling-compute-back-on-premises/>

²⁸ <http://www.cio.com/>



The Security Risk of the Public Cloud

In a closely related topic – according to various surveys and reports, security tops many organizations list for reasons for removing their applications and data from the public cloud.

A survey conducted by LogicMonitor found that among organizations that moved away from the cloud, 36% chose information security as the primary reason behind the move.²⁹ Similarly, a report by IDC revealed that about 47% of respondents regard security as the top repatriation driver.³⁰ The report also showed that security concerns were more pronounced among organizations in heavily regulated industries, such as healthcare and finance.

There is certainly reason to be concerned about the security of public cloud infrastructure. Despite the best efforts of cloud providers, the ever-increasing sophistication and frequency of cyber-attacks have made it difficult to achieve complete security. A recent survey conducted on companies revealed that a staggering **98% of respondents had suffered at least one cloud data breach in the past 18 months**, which is a 19% increase from the earlier survey's 79% figure. It is also worth noting that **45% of all data breaches occurred in the cloud**.³¹

The Concentration of Data in Public Clouds: A Major Security Vulnerability

The consolidation of a large attack surface by the three major cloud providers, AWS, Azure, and Google, is one of the major concerns with cloud providers. IBM's 2022 Transformation Index found that 54% of respondents agreed that public cloud security is not sufficient.³² This is particularly alarming as 60% of corporate data is already stored in public clouds as a major security vulnerability in one of these primary cloud providers could lead to a significant data breach on an unprecedented scale. As a result, there is growing apprehension about the concentration of so much data in the infrastructure of a limited number of providers.

Misconfigurations are Putting Security at Risk

Although security failures by public cloud providers are rare, misconfiguration of cloud infrastructure by customers is unfortunately common.³³ While a few hacks are the result of credentials bought on the “dark web” and other nefarious means, the vast majority are simple mistakes like an unsecured API. Gartner claims 99% of all hacks in 2023 will be the result of a client's mistake – mostly misconfiguration. Unsurprisingly, 83% of organizations say they believe they are more at risk from a public-cloud breach.³⁴

The Chief Causes of Misconfiguration

- Too many cloud APIs and interfaces to adequately govern [32%]
- Lack of adequate controls and oversight [31%]
- Lack of team awareness of security and policies [27%]
- Negligent insider behavior [23%]
- Not enough security expertise [23%]
- Not checking infrastructure code prior to deployment [21%]

²⁹ <https://www.logicmonitor.com/resource/cloud-vision-2020-future-cloud-study>

³⁰ <https://www.webwerks.in/blogs/cloud-repatriation-realistic-future-or-just-passing-fad>

³¹ <https://ermetic.com/news/ermetic-reports-nearly-100-of-companies-experienced-a-cloud-data-breach-in-past-18-months/>

³² https://filecache.mediaroom.com/mr5mr_ibmnewsroom/194056/IBM%2BTTransformation%2BIndex%2B-%2BState%2Bof%2BCloud.pdf

³³ https://www.sonatype.com/hubfs/State_of_Cloud_Security_2021.pdf

³⁴ <https://www.securityweek.com/survey-shows-reasons-cloud-misconfigurations-are-many-and-complex/>



While organizations are using a variety of cloud security tools to reduce security risks, in most cases, they rely heavily on cloud provider's tools, each of which works uniquely. For example, AWS, Azure and GCP do not handle security functions such as identity and access management (IAM), privileged access management and VPNs in the same way. Meaning, in a multi-cloud world, organizations must have expertise in several different vendor's tools and in each of the tools that vendor supplies. While on the surface, that may not sound daunting, Google for example, supplies **thirty-six different tools**. Add those to tools from AWS or Azure and the matrix becomes quite complex.

Add to that a general lack of cloud security skills, is a significant challenge for the 69% of organizations who admit their teams lack skills to be proficient in architecting/managing cloud applications.³⁵

The risks of these common breach instances are heady. In recent examples:

- Misconfigured Amazon Web Services (AWS) S3 buckets belonging to McGraw Hill exposed more than **100,000 students' information** as well as the education publishing giant's own source code and digital keys.
- Securitas left extremely sensitive data in one of its Amazon S3 buckets exposed through misconfiguration, allowing anyone to access **nearly 3 TB, 1.5M files of sensitive company data** without authentication. This exposure poses a risk to both travelers and airport staff where criminals could use the information to scam airline customers or create fake staff ID cards. In addition, Securitas faces sanctions for breaching data protection regulations of \$522,000.
- Breastcancer.org left an unsecured S3 bucket accessible to anyone over the internet without the need for authentication. The bucket held **350,000 files, 300,000 images**, 150G of data, nude images of patients, and detailed information about test results, which is a clear violation of HIPPA policies.
- **At least a terabyte** of U.S. military emails stored in the Azure cloud were left publicly accessible because of a configuration error. Personal information, security clearance forms, and conversations among officials were among the compromised data.
- Microsoft unintentionally exposed the data of over **65,000 companies and 548,000 users** due to a misconfiguration of an Azure storage bucket. This leak, dubbed "BlueBleed I," resulted in the potential for unauthenticated access to business transaction data related to interactions between Microsoft and its prospective customers.
- And the list goes on....

Such incidents have led many companies to reconsider their use of the public cloud. In regulated industries, **81% of decision-makers have repatriated at least some data and workloads** from public clouds due to concerns over compliance issues, misconfigurations, and lack of visibility.³⁶ Changing data regulations have also driven some companies to move their data back on-premises to comply with local regulations.

³⁵ https://filecache.mediaroom.com/mr5mr_ibmnewsroom/194056/IBM%2BTransformation%2BIndex%2B-%2BState%2Bof%2BCloud.pdf

³⁶ https://www.vmware.com/content/dam/learn/en/amer/fy22/pdf/987789_AMER_22Q2_IDC_Sovereign_Cloud_WP.pdf



Regulations Trigger Repatriation Response

Application and data repatriation for compliance reasons is becoming increasingly important for companies in various industries. New data protection regulations continue to appear across the globe, some of which mandate specific in-country or even on-site data storage, organizations are finding themselves forced to pull workloads back in-house to avoid potential compliance issues.

In the instance of China's 2017 Cybersecurity Law, it led many foreign companies operating within the country to move their data back on-premises. Similarly, when Germany implemented new privacy regulations prohibiting the transfer of German citizen data out of the country, companies had to pull any data analysis relating to that data off public clouds to local data centers. These examples highlight the need for companies to be vigilant in understanding and complying with ever-changing regulations to avoid potential penalties and legal repercussions. Some organizations are pulling data or applications back in a precautionary move.

More than one-half [57%] of organizations are concerned about audit and compliance risks associated with using the public cloud for data storage and management.³⁷ The lack of visibility and understanding of their data can increase the likelihood of regulatory penalties, making it crucial for companies to have a comprehensive understanding of their data and its location.

Hybrid Cloud: The Safer Alternative

Repatriating workloads to the hybrid cloud can give organizations more control over their security posture. The average cost of a data breach for a hybrid cloud environment was 3.61 million dollars, which is 1.19 million less than all other cloud environments — public or private.³⁸ While no one wants to incur those costs, the truth is that most organizations will experience a breach. Minimizing the cost and impact with better control makes hybrid a worthwhile consideration for applications holding high-risk data.

³⁷ <https://businessinsights.bitdefender.com/moving-to-the-cloud-be-ready-to-embrace-complexity>

³⁸ <https://www.ibm.com/security/data-breach>



The Cloud is Not Always Best

As organizations move their workloads to the public cloud, many are finding that not all applications are suitable for the cloud environment. In fact, some applications may perform better [and cost less] when run on-premises. As a result, many organizations are repatriating applications and data back to their data centers to optimize their performance and reduce costs. Seventy-two percent of 2021 repatriations were due to "performance or cost reasons, or a combination of both."³⁹



**72% OF 2021
REPATRIATIONS WERE
DUE TO PERFORMANCE
OR COST REASONS, OR
A COMBINATION OF
BOTH**

When Cloud Migration Leads to Latency

One issue typical issue that drives a return from the cloud is latency—where the end user experiences slower performance—due to the physical distance between the user and the cloud server. Some apps, such as certain databases, might require local network performance. Others require low latency and high performance, such as real-time applications like video conferencing or gaming that require instant responses to user actions, which may not be possible when the application is hosted in the cloud.

Although technologies such as edge computing, caching, and network optimization will cut latency, in other cases, the simplest solution will be to bring the data back in-house, shortening communications paths, and allowing the IT team to fine-tune storage, compute, and networking to suit the applications and workloads.

Moreover, some applications require intensive processing and high I/O (input/output) operations, such as those that involve big data analytics or machine learning. Moving such applications to the cloud may lead to slower processing times and higher costs due to the need for more powerful cloud instances or expensive cloud services. One of the easiest and most pragmatic fixes is to shorten the communication path. This means that unless the data was born on the cloud, it's also a good idea to bring the analytics back in-house.

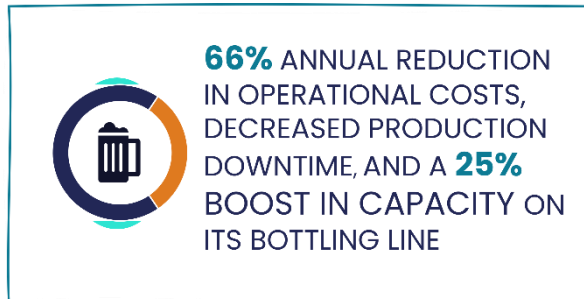
From Cloud Frustration to Always-On Performance

Assemblage, a Mumbai-based 3D animation expert, faced several challenges in the past when it comes to business-critical projects valued at millions of dollars. External cloud vendors could not accommodate their need for more storage or processing power at short notice. Additionally, their heavy file processing requirements made remote cloud solutions prove unsuitable due to latency and performance issues. Technical issues halted time-sensitive projects for weeks, leaving designers and animators idle until they resolved them.

³⁹ <https://www.virtana.com/press-release/72-of-enterprises-have-moved-one-or-more-applications-from-public-cloud-back-on-premises-virtana-state-of-hybrid-cloud-report/>



To overcome these challenges, Assemblage needed a mix of always-on performance, agility, and scale without prohibitive expenses. Repatriating to a hybrid cloud, collocated environment provided the solution with the added benefit of six server blades in reserve to account for elastic workflows.



The results were impressive. Assemblage was able to handle **four times the workload**, resulting in faster rendering of files, accelerated IT responsiveness to take on processor-heavy tasks, and a reduced need to liaise with multiple external vendors. The solution also offered enhanced security and compute power, enabling Assemblage to instantly meet customer demands.⁴⁰

ERP Returns Home

Many organizations have opted to move their SAP and ERP (enterprise resource planning) applications to the cloud to reduce costs and improve scalability. However, some companies are finding that hosting these critical systems in the cloud can lead to performance issues and challenges in managing and troubleshooting them. As a result, repatriating SAP [and other ERP applications] to on-premises or private cloud environments has become an increasingly popular trend.

According to the Americas SAP User Group (ASUG), the number of enterprises planning to host SAP in the cloud decreased from 16% in 2019 to 8% in 2021. ASUG also reports that 91% of SAP users say their SAP S/4HANA deployments are or will be on-premises, hybrid, or private cloud solutions, with **only 9% citing an all-public cloud strategy**.⁴¹

One example of a company that has repatriated their ERP applications, as well as other business and collaboration tools, is **New Belgium Brewing**.⁴² The company had previously moved their core applications to the cloud but found that it was difficult to monitor and troubleshoot performance issues. By hyper-converging their applications in a colocation data center, New Belgium was able to regain control over their ERP performance and management. New Belgium has also achieved significant cost savings, with a 66% annual reduction in operational costs, decreased production downtime, and a 25% boost in capacity on its bottling line. Repatriating these applications has allowed the company to better control its production and monitoring while achieving higher performance and efficiency.

One possibility for some organizations to consider is repatriating their ERP test and development environments back on-premises. This can provide a greater degree of control and security over sensitive data and allow for easier collaboration among teams. Additionally, having a local test and dev environment can lead to faster development cycles and improved quality assurance, as developers can quickly find and resolve issues without having to rely on remote resources.

⁴⁰ <https://www.hpe.com/psnow/doc/a50003178eew>

⁴¹ <https://www.asug.com/insights/the-best-of-both-worlds-how-enterprises-are-regaining-their-edge-with-a-multi-cloud-sap-s-4hana-strategy>

⁴² <https://www.prnewswire.com/news-releases/new-belgium-brewing-moves-core-applications-from-cloud-services-to-on-premises-dell-emc-infrastructure-to-support-expanding-business-300808382.html>



The Wrong Cloud Provider

Finally, companies may come to the realization that they have made an error in their first public cloud provider selection, resulting in the need to reassess their relationship and potentially switch to another provider or alternative deployment method.

When companies choose the wrong cloud provider, it can have significant consequences. For instance, a company may have specific needs for customization and flexibility that the cloud provider is unable to meet. For example, a company may need specific security measures, compliance requirements, or integration with existing applications or systems. In such cases, the company may have to work around the provider's limitations, resulting in inefficiencies and lower productivity.

In addition, relationships with cloud providers can sour over billing, employee turnover, service and support issues that decline over time, or were never up to snuff in the first place. Organizations are also increasingly concerned about vendor lock-in, where it becomes difficult for companies to switch to another cloud provider or repatriate an application. When businesses opt for a multi-cloud or multi-hybrid cloud strategy, they may become anxious about certain workloads or tasks becoming restricted by proprietary standards that limit interoperability and portability. They may realize that the vendor's approach constrains them more than they are comfortable with.



Moving Forward: What You Need to Know

What You Have and Where It's Located

There are several considerations to keep in mind when planning a cloud repatriation. The first essential step is discovery and assessment, which involves identifying which applications and datasets are candidates for repatriation. Here are some practical suggestions on the information you'll want to collect:

Identify all the applications or datasets: Make a list of all the applications that are currently running in the public cloud environment. Identify all the types of datasets.

Analyze application and data dependencies: Determine which applications are dependent on other applications, databases, or other infrastructure components. Identify where it resides.

Assess application and data complexity: Determine how complex each application is, and what the technical requirements are for each application.

Assess application and data business value: Determine the business value of each application or dataset, and whether it is critical to the organization's operations.

Assess application and data costs: Determine whether repatriating the application will result in cost savings, and whether there are any opportunities to optimize costs through or during repatriation. This could involve identifying and cutting unnecessary infrastructure, optimizing licensing costs, or leveraging new cost-saving solutions.

Analyze application and data performance: Determine whether the application's performance can be improved during repatriation, and whether there are any opportunities to optimize the application for the on-premises environment. This could involve identifying and addressing bottlenecks, optimizing resource allocation, or leveraging new hardware solutions.

Evaluate application reliability and mission criticality: Assess the reliability requirements and mission criticality of each application or dataset to determine if repatriation is necessary for ensuring robust and uninterrupted operations.

Analyze application and data security and compliance: Determine whether each application meets the organization's security and compliance requirements, and whether they can repatriate it without introducing any new risks.

IT Skill Sets: Depending on the complexity of the repatriated applications and data, the IT team may need to acquire new skills or expertise to manage the on-premises infrastructure. Alternatively, the company can choose to partner with a managed IT services company, which often partners with colocation data centers.



What Can Get in Your Way

Evaluating the repatriation of applications and data from the cloud to an on-premises environment is a strategic and necessary exercise. However, like most valuable endeavors, it is not without its challenges. These obstacles can cause hesitation and reluctance, but with careful planning and execution, repatriation can be a powerful tool for organizations looking to strike the right balance between cloud and on-premises solutions. Here's a look at the common barriers:

Technical complexity: Many cloud applications are built using cloud-specific tools and technologies, which may not be easily replicable in an on-premises environment.

Data gravity: Some applications may have substantial amounts of data stored in the cloud, which can make it difficult to move them back to an on-premises environment due to the time and cost involved in transferring the data.

Cost considerations: While repatriation can result in cost savings for some applications, for others, it may be more expensive due to the need to invest in new hardware or software to support the application.

Skills gap: Depending on the complexity of the repatriated applications, the IT team may need to acquire new skills or expertise to manage the on-premises infrastructure. This can be a challenge for organizations with limited resources or expertise.

Vendor lock-in: Some organizations may be hesitant to repatriate applications due to concerns about vendor lock-in. If an organization has invested heavily in a particular cloud provider's tools and services, it may be difficult to move away from that provider without significant costs or disruption.

Security and compliance: Some applications may have specific security or compliance requirements that can be difficult to meet in your own datacenter.

Physical data center space: If an organization moved entirely to the cloud, they may have reduced or eliminated the physical space previously used to house their data center equipment.

Your Deployment Models: Striking the Perfect Balance

A hybrid deployment, which combines both on-premises and cloud environments, can be a great option for organizations that are hesitant to fully repatriate all their applications and data back to their physical data center. A hybrid model can address concerns related to application complexity, security, compliance, and costs, while still allowing organizations to take advantage of the scalability, flexibility, and cost savings of the cloud.

For example, an organization may find that an on-premises deployment better supports an application requiring low latency and high bandwidth for certain functions. However, the same application may also have other functions that can benefit from the scalability and flexibility of the cloud. In this case, organizations can utilize a hybrid deployment to keep the low-latency functions on-premises and leverage the cloud for other functions. Let's look at how a hybrid deployment can offset the barriers to repatriating applications or data.



Technical complexity: A hybrid deployment can allow organizations to keep certain applications in the cloud while moving others to on-premises infrastructure. This approach can reduce the complexity of migrating applications to on-premises infrastructure by prioritizing the applications that are easier to move first.

Data gravity: Organizations can leverage a hybrid deployment to store frequently accessed data in the cloud while relocating less frequently accessed data to on-premises storage. This can help to reduce the time and cost involved in transferring large amounts of data.

Cost considerations: A hybrid deployment can enable organizations to balance the cost of on-premises infrastructure with the flexibility and scalability of cloud services. By strategically deploying applications to the cloud or on-premises infrastructure based on their cost and performance requirements, organizations can optimize their IT spend.

Skills gap: A hybrid deployment can enable organizations to leverage the expertise of cloud service providers while also building internal capabilities for managing on-premises infrastructure. This can help to bridge the skills gap by gradually building the necessary skills over time.

Vendor lock-in: A hybrid deployment can enable organizations to avoid vendor lock-in by using multiple cloud providers or deploying some applications on-premises. This approach can provide flexibility and enable organizations to choose the best provider for each application or workload.

Security and compliance: A hybrid deployment can enable organizations to maintain security and compliance by deploying certain applications or workloads on-premises while using cloud services for others. By carefully managing the placement of applications based on their security and compliance requirements, organizations can minimize their risk exposure.

For example, a company may use a hybrid deployment to move its email and file-sharing applications to the cloud, while keeping its mission-critical financial application on-premises. This approach would allow the company to take advantage of the scalability and flexibility of the cloud for its less critical applications while maintaining the control and security of the data and applications.

Colocation: Repatriation Made Easy[er]

Colocation, or colocating data center infrastructure in a third-party facility, can be an attractive solution for organizations looking to offset some of the barriers to adoption associated with repatriating applications from the cloud to on-premises infrastructure. Here are a few reasons why:

Reduced capital expenditure: One of the biggest challenges of repatriating applications is the need to invest in new hardware or software to support the application. Colocation can help organizations avoid this expense by providing access to shared infrastructure on a pay-as-you-go basis.



COLOCATION DATA CENTERS

THE DRIVING FORCE BEHIND GLOBAL CONNECTIVITY



WHAT IS COLOCATION?

A colocation data center is a facility where businesses can rent space to house their computing infrastructure. These centers provide power, cooling, security, and support services, allowing organizations to outsource the physical aspects of their data center operations while benefiting from shared resources and professional management.

FACTS ABOUT THE COLOCATION INDUSTRY



The global data center colocation market will reach **\$131.80 billion** by 2030 — a significant increase from 2022's \$57.2 billion. (Techjury)



The global data center colocation market will expand with a compound annual growth rate of **6.5%** from 2021 to 2027. (GlobeNewswire)

The IT load capacity is expected to reach **71,965.5 MW** by 2029 [Mordor Intelligence]



There are **3346** colocation data center facilities across the world [Mordor Intelligence]



There are **977** colocation data center facilities in North America [Mordor Intelligence]



The number of installed racks is expected to reach **14,206,878** units by 2029 [Mordor Intelligence]

The tier 4 data center reached **5881.0 MW** in 2023 and is further projected to exhibit a CAGR of **13.46%**, surpassing **12547.2 MW** by 2029 [Mordor Intelligence]



Access to specialized expertise: Colocation providers have deep expertise in managing data center infrastructure and can offer services like remote hands and eyes support, infrastructure monitoring, and maintenance. This can be particularly valuable for organizations with limited resources or expertise. MSP providers located at the colocation facility can provide additional support and expertise for managing the infrastructure, which can help address skills gap concerns and reduce the burden on the organization's IT team.

Flexibility: Colocation providers offer a range of options for data center space and infrastructure, allowing organizations to choose the configuration that best suits their needs. This can include options like power density, cooling, security, and network connectivity.

Scalability: Colocation can provide organizations with the flexibility to scale up or down as needed, without the need to invest in new hardware or infrastructure. This can be particularly valuable for organizations with unpredictable or rapidly changing IT needs.

Compliance: Colocation providers can offer facilities that meet a range of compliance requirements, including certifications like HIPAA, PCI, and SOC 2. This can be particularly valuable for organizations with specific compliance requirements that can be difficult to meet in an on-premises environment. Overall, colocation can be a valuable tool for organizations looking to offset some of the barriers to adoption, including cost, associated with repatriating applications from the cloud to on-premises infrastructure. By providing access to shared infrastructure, specialized expertise, flexibility, scalability, and compliance, colocation can help organizations achieve the benefits of on-premises infrastructure without the costs and complexity associated with building and managing their own data center.

Skill Sets: Colocation facilities offer valuable solutions for organizations facing gaps in skill sets in managing infrastructure components such as power systems, backup generators, cooling systems, robust power grids, and HVAC systems which are not typically within the core capabilities or responsibilities of IT staff. These critical infrastructure elements require specialized expertise for efficient operation, maintenance, and troubleshooting. Additionally, IT staff may have limited experience managing servers, racks, and cabling which are vital components of the IT infrastructure. By collocating their infrastructure, businesses can rely on the expertise of colocation providers to handle these intricacies. Entrusting these responsibilities to colocation providers allows organizations to easily bridge skill gaps and ensure the reliable and optimized operation of their critical infrastructure for enhanced performance and operational success.

Breaking Down Barriers: How Colocation and Hybrid IT Work Together

By bringing colocation and hybrid together, organizations can enjoy the best of both worlds when it comes to their IT infrastructure. Colocation offers reliable and secure physical data center space, power, cooling, and connectivity, while hybrid IT enables organizations to have greater flexibility, scalability, and cost-effectiveness by leveraging both on-premises and cloud resources. By combining these two approaches, organizations can offset many of the barriers that previously made it challenging to move their applications and data back to on-premises infrastructure. This not only offers greater control and security over sensitive data but also enables organizations to achieve higher levels of performance and lower latency, which is especially critical for applications that require real-time data processing. Additionally, colocation and hybrid can help organizations meet compliance requirements and simplify the management of their IT infrastructure by centralizing it in one location.



TRG Datacenters

Experience and reliability are at the heart of TRG Data Centers, where we deliver exceptional data center solutions. With a management team that **boasts a 20-year track record of 100% uptime**, TRG Datacenters can be trusted to provide a stable and secure environment for your critical IT assets.

Experience and Reliability: At TRG Datacenters, we are honored to offer state-of-the-art facilities that are strategically located in highly vetted, low-risk areas. We strive to remain at the forefront of innovation with advanced features such as waterless cooling, indoor generators, and unlimited fuel sources. Our commitment to excellence goes beyond reliability; we design our facilities, services, and interiors with maximum productivity and comfort in mind.

Comprehensive Services: TRG Datacenters aims to deliver an experience that people love, which is why we offer comprehensive services that cover everything from migration to cross-connects to onsite remote technicians, all at no cost to you. We provide free cross connects, which can often be problematic in other data centers, and our free remote hands services mean that customers can delegate technical tasks concerning their IT management and maintenance to trained professionals employed by TRG Datacenters. TRG Datacenters' aim is for customers never to have to visit the data center, but we're confident that once they do, they'll want to.

Commitment to Excellence: When considering application repatriation from the cloud to an on-premises environment, it's important to choose a data center provider that can deliver exceptional experiences, comprehensive service offerings, and a commitment to excellence. TRG Datacenters' outstanding 100% uptime record over the past two decades is a testament to our reliability and stability, and our focus on delivering exceptional experiences is reflected in every aspect of our facilities and services. Whether you're a small startup or a large enterprise, TRG Datacenters' commitment to excellence makes us an excellent choice for your data center needs, and we're here to support your migration every step of the way.



TRG Datacenters - Houston Data Center

5.0 ★★★★★ (77)

Internet service provider



Colo+

As organizations contemplate the repatriation of their applications from external hosting environments, TRG's managed colocation solutions, known as Colo+, become an invaluable asset. Our expertise in seamless migrations, efficient rack management, and exceptional service levels provides valuable support in overcoming the potential hurdles of application repatriation. We help our clients navigate technical complexity, offer cost-effective data transfer options, bridge skills gaps, provide flexibility to avoid vendor lock-in, ensure security and compliance, and offer scalable data center space for repatriated applications.

When it comes to transitioning applications from the cloud, a smooth and hassle-free process is crucial. Organizations can rely on our proven track record of completing migrations to TRG within 12 hours, ensuring minimal to no disruption and a seamless transfer of your critical applications. Our state-of-the-art facilities provide the ideal environment for hosting and managing applications, offering the performance, security, and reliability necessary to deliver an optimal cloud-like experience.

Exceptional service levels play a crucial role in supporting organizations throughout the application repatriation process. With rapid ticket response times and a committed support team, we prioritize your requirements, ensuring a smooth and efficient repatriation experience.

The Power of Partnerships

The value of partnerships within the TRG ecosystem cannot be overstated. TRG offers more than just a standard data center experience. We understand that businesses have diverse needs and priorities, and we aim to provide a comprehensive solution by fostering a thriving ecosystem of partners.

In a shopping mall, you'll find a variety of businesses and services beyond just food options. There are specialty shops, boutiques, service providers, and larger anchor stores, all coexisting to create a vibrant and interconnected community.

Similarly, in a well-developed data center ecosystem, TRG brings together a diverse range of partners and offerings. Just as the shopping mall caters to unique needs and preferences, TRG's partners specialize in various areas such as connectivity, value-added reselling, managed services, and cloud infrastructure. This diverse set of partners complements one another, creating a dynamic and collaborative environment for clients.



We offer a carrier-neutral approach, which provides you with a wide selection of Internet providers and carriers to choose from. Each carrier brings unique strengths and capabilities to the table. Our facility is home to thirteen different providers, including AT&T, Comcast, Phone Scopes, Light Wave, CenturyLink, Lumen, Zillow, Cogent Crown Castle, Easy Fiber, and Grind Communications. This diverse range of carriers ensures availability of a multi-carrier blend with redundant backbone infrastructure, guaranteeing exceptionally reliable network connectivity and an ecosystem that meets your specific requirements.

As a client, you have the freedom to determine what is essential for your business. Instead of overwhelming you with a lengthy list of names, our approach is to understand your needs and provide tailored suggestions. We act as your guide, leveraging our carrier-neutral status to recommend the most suitable options. Rest assured, we don't ever charge for cross-connects, making it easier for you to become more reliable in your operations by adding additional or changing network connections whenever you need to.

Being a part of our carrier-neutral environment brings numerous advantages. For instance, our hub-and-spoke architecture enables seamless multi-site connectivity, making it ideal for hospitals and cloud connectivity. The higher quality of service and increased uptime are notable benefits you can expect. Moreover, the competitive environment among carriers drives competitive rates, often resulting in cost savings. Smaller clients can take advantage of this by arbitraging network deals, effectively reducing costs and making the rack practically free. On the other hand, enterprises benefit from having direct cloud connections, such as Direct Connect Azure, enabling you to accomplish your cloud-related objectives efficiently.

Moreover, TRG has forged partnerships with value-added resellers (VARs) and managed service providers (MSPs), who have set up offices and dedicated racks within the data center. This integration of VARs and MSPs provides clients with convenient access to a wide range of expertise. Whether it's hardware procurement, technical support, or specialized services such as VDI infrastructure or fraud prevention, clients can rely on these partners for tailored solutions.

The presence of cloud infrastructure partners further enhances the ecosystem. TRG has collaborated with numerous cloud providers, enabling seamless hybrid cloud infrastructure solutions. These strategic partnerships allow clients to leverage the benefits of cloud connectivity and direct connections to leading cloud platforms like Azure.

The beauty of TRG's ecosystem lies in the diversity and strength of its partners. Each partner brings unique strengths and expertise, filling in gaps and adding value to the overall data center experience. Rather than overwhelming clients with an exhaustive list of options, TRG takes a consultative approach, understanding clients' needs and making specific recommendations based on their requirements.

Moreover, the data center's partnerships extend beyond the physical location. Many of the partners have additional locations in other markets, offering clients the opportunity for disaster recovery as a service and data protection strategies. This flexibility allows enterprises to adopt hybrid infrastructure models, leveraging the colocation services provided by TRG while also benefiting from cloud capabilities and secondary site strategies.



Conclusion

The concept of cloud repatriation requires a more nuanced understanding than simply framing it as a binary "yes or no" question. As businesses have gained unprecedented freedom in workload deployment, they can strategically place their workloads based on unique business priorities, breaking free from IT limitations that once confined them. The rise of hybrid multi-cloud models further emphasizes the need for flexibility and the ability to evaluate infrastructure requirements on a workload-by-workload basis.

While cloud providers have offered significant benefits such as scalability and cost-effectiveness, the success story of 37Signals' move, and their improved performance is a wake-up call for organizations to reassess their cloud spend. However, it is important to recognize that each workload has its own set of requirements and considerations.

Here's a concise decision framework with three thought-provoking triggers effectively guide your considerations:

Weighing the Options: A Decision Framework for Repatriation

Cost and Waste

Are you in control of your cloud spend, and are you maximizing cost-efficiency? Consider whether your organization is experiencing escalating cloud costs, limited cost visibility, or a lack of control over resource utilization. Reflect on whether your cloud expenses align with actual usage and business needs. Furthermore, contemplate the potential waste associated with maintaining non-business-critical data or underutilized resources. Does repatriating applications offer an opportunity to regain control, optimize costs, and minimize wasteful expenditure?

Performance

Are you facing performance bottlenecks or experiencing limitations in meeting your application's performance requirements? Evaluate whether your applications are subject to latency issues, network congestion, or suboptimal response times due to factors like unpredictable public cloud performance or data transfer limitations. Assess if repatriating applications can provide the necessary infrastructure proximity, bandwidth, or low-latency connections to enhance performance and improve user experience.

Security

How well can you ensure the confidentiality, integrity, and availability of your sensitive data and critical applications in the public cloud? Reflect on whether your organization has concerns about data privacy, compliance requirements, or the ability to maintain granular control over security measures. Consider if repatriating applications to on-premises or private cloud environments can offer a higher degree of control, visibility, and customization over security measures, reducing reliance on third-party providers and mitigating potential vulnerabilities.



The framework aims to stimulate thoughtful considerations and assist businesses in making informed decisions aligned with their specific needs and priorities.

Colocation facilities, such as TRG Data Centers, provide an extra layer of flexibility by offering businesses the option to rent space in a data center for hosting their IT infrastructure. This allows companies to maintain physical control over their equipment while benefiting from the data center's provisions of power, cooling, security, and network connectivity. Additionally, colocation providers often offer managed services, which alleviate the burden of maintenance and management.

The complexity of workload deployment decisions necessitates a comprehensive evaluation of available options, and colocation can be a compelling alternative for organizations considering repatriating their applications. By partnering with TRG Data Centers, businesses can leverage the benefits of an on-premises deployment model, combined with the advantages of the public cloud, without incurring excessive costs.

In conclusion, the topic of cloud repatriation goes beyond a simple "yes or no" question. It requires careful assessment, considering the unique requirements of each workload. TRG Data Centers stands ready to assist organizations in evaluating colocation as a viable option for application repatriation, providing the necessary flexibility and support for businesses to make informed decisions about their infrastructure deployment.





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