



**wasabi**<sup>®</sup>  
hot cloud storage

**Atempo**  
preserving data ecosystems

# GET YOUR CLOUD-TO-CLOUD MIGRATION STRATEGY RIGHT!

A White Paper by Wasabi and Atempo

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## EXECUTIVE SUMMARY

Perhaps you're not aware of it, but **your company already has a multi-cloud strategy**. Digital transformation, home office tools running on SaaS platforms, increased reliance on artificial intelligence, rules and regulations surrounding data preservation... They all combine to make the standard single cloud model (buy capacity, buy processing power, etc.) completely redundant. The cloud, and its limitless resources appear to tick many IT boxes and the ongoing pandemic is accelerating the conversion to this technology.

But how do we choose the right cloud provider? How do we reconcile this transition with the reality of what the market has to offer? Solutions do exist that have proven their value in many areas. Well-researched and executed projects allow us to avoid the pitfalls of a journey to the cloud. By identifying the right criteria **to evolve your data storage** (costs, performance, integration with on-prem solutions, reversibility and ease of migration), you can limit risks and successfully manage multi-cloud environments with a cloud migration strategy by using the right toolsets. Multi-cloud, Sky Computing, whatever the name we want to give it, welcome to the world of the cloud environment that **lets you choose** in complete freedom and security.

# CHAPTER 1 – CLOUD-TO-CLOUD MIGRATION IN CONTEXT

Increasing businesses' digitalization has seen tremendous growth in data output in particularly unstructured and semi-structured data such as emails, videos or new analytical workflows which require serious storage capacity. **Each company on average is experiencing a 100% increase every two years.** Depending on the nature of the activity and the maturity of the organization this can be much greater if business intelligence and artificial intelligence are deployed. Buying additional storage equipment and resources to manage these volumes is for many no longer tenable. And we need to factor in legislative and regulatory loads concerning data preservation, plus privacy and sovereignty issues. **The movement to an almost infinite cloud storage capacity along with major data processing fire power would therefore seem to be the best solution.**

The cloud is part and parcel of most company's IT infrastructure and recent events including the pandemic have only served to accelerate the adoption of this technology. According to recent research from TechAnalysis Research **enterprises deploy more than 3 Cloud providers for infrastructure or applications.** The same study shows that **companies largely follow a hybrid model** (86.5% use a private cloud). 30% of tasks are handled in a public cloud. The same proportions of operations run in the local data center and the rest on a hybrid or private. On average, firms use 3.7 SaaS applications with, office applications such as Microsoft 365 or G Suite being the most common. Depending on the workloads, companies choose to work with different public cloud providers. **Enterprises are already well advanced with multi-cloud environments.** The specialization of available offerings will become an increasingly important criterion when choosing a cloud provider.

## Take Away

Enterprises deploy more than 3 cloud providers for infrastructure or applications. The impossibility of migrating tasks represent over 30% of the reasons why a cloud project is abandoned.

The choice of provider is subject to different criteria. The first is the quality of programming options and management tools. Then comes price way ahead of the capacity to migrate workloads and the related support and services in this domain. This criteria ranking is rather surprising because **the cost and the impossibility of migrating tasks each represent over 30% of the reasons why a cloud project is abandoned.**

## Gaps in Expectations and Reality

In another study, **enterprises affirm that they expect the cloud to simplify operations, increase flexibility, reduce costs** and provide a clearer picture of their data. Many soon discovered that using public cloud storage platforms to handle data management and storage challenges often implied difficult compromises and led to data residency and regulatory issues and unexpected costs. Around 80% of organizations responding to a Dell Technologies survey have repatriated their data from the cloud, **64% pointing to a total service cost that was higher than expected and almost half flagged data security and conformity issues.**

The reasons behind these shortfalls are many. The Vanson Bourne legal office has looked into the subject. They note that 91% of firms had high expectations for the cloud in terms of simplifying operations, improving agility, reducing costs and increasing visibility. 88% of IT teams had received a mandate from management to switch to the cloud. Less than 4 in 10 were able to do this. The first cause was data fragmentation. According to IDC, **enterprises have an average of 23 data silos.** Each silo is managed separately with their own data lifecycle management, security and protection rules. These rules are typically managed by a variety of different tools and processes that push up costs and resource requirements. IT teams spend an average of 19 weeks a year managing cloud

infrastructure and applications. To ensure the cloud workloads run smoothly, companies state that 30% more staff and 50% more budget would be necessary. 67% believe that this will have an impact on business activity. This would explain why companies place data management in second place in the Dell Technology Index just behind cybersecurity tools. Yet despite this, cloud investment remains a top priority for businesses.

**The fear of vendor lock-in is another cause for concern.** This point is the first contractual concern and is ahead of any other contract clause (European Research by Mitel). 46% of enterprises want to be able to switch providers if the services do not attain company objectives. The length of the contract is the key clause under consideration to avoid lock-in. Companies want more flexible contracts with a rapid escape clause. Ideally, it should be possible to migrate data and applications to different environments according to company needs. In practice, it is mainly data movement that inflates cloud environment invoices. Even if actual storage is competitively priced, the **data recovery, egress or migration costs can be very high. Migration time constraints and very short recovery time objectives (RTOs) only serve to compound risks and costs.**

## Take Away

The fear of vendor lock-in is another cause for concern: 46 % of enterprises want to be able to switch providers.

## Solutions Exist!

Enterprises are compelled to shift their data from one cloud to another, to save money or time, to enhance business opportunities, for compliance reasons or to improve business reliability and performances.

Despite the complexity of cloud-to-cloud migrations, rapid, efficient and economical solutions fortunately do exist. One such example is a combination of Wasabi Hot Cloud Storage and Atempo's Miria for Migration platform that resolves many cloud data management and cloud-to-cloud migration issues.

**Wasabi has a single stated aim: provide efficient and secure storage at the lowest possible cost.** The idea is to provide storage in the same way as an energy provider provides energy! **Wasabi charges 80% less than AWS S3 for storage with no restoration or API costs.** You can reserve storage capacity and benefit from additional price reductions on the reserved capacity. Wasabi displays an incomparable price tag of less than \$6/TB/month. With the level of service on offer, the solution represents a genuine alternative for a high-volume cloud storage. These advantages, when added to the data management fire power of Atempo's Miria for Migration, bring real business benefits. Initially designed for backup and archiving workflows, Miria has evolved to cover newer business cases including migration and synchronization between a wide range of storage targets. Miria is cited by Gartner in its recent hybrid cloud survey and **is the solution of choice for many storage vendors including Qumulo, DDN, Nutanix and Huawei.** The solution migrates data without rescanning the file system. Miria manages many parallel data flows and handles multi-petabyte data volumes and many billions of files.

Miria now supports **cloud storages and object storage as source.** In other words, **Miria can read from the cloud and migrate and synchronize to another on-prem or different cloud target.** Supported source environments include AWS S3 with other public clouds (Azure, Google Cloud Platform and Swift) available in early 2021. The interface continues to evolve to bring greater simplicity to data movement and data protection operations.

# CHAPTER 2: IDENTIFY THE KEY CRITERIA FOR CHANGING YOUR CLOUD STORAGE

## Summary:

Legacy on-premises storage solutions and first-gen cloud storage services are too costly and complex for the era of big data and digitalization. **Cloud Storage 2.0 commoditizes cloud storage with groundbreaking pricing, performance and simplicity.** The next generation of cloud storage lets you cost-effectively store any type of data, for any purpose, for any length of time. By unleashing a virtually endless supply of data, Cloud Storage 2.0 will fundamentally transform the way businesses operate and compete.

## Cloud Storage 1.0: Public Cloud Object Storage as a Service

A decade ago, the first-generation cloud storage services (aka Cloud Storage 1.0), improved economics and accelerated time-to-market by eliminating equipment expense and complexity and enabling pay-as-you-grow scalability. Cloud-based services also offered inherent resiliency, enabling more cost-effective disaster recovery and business continuity. They also protected against obsolescence—new features and capabilities are introduced in the cloud, with minimal imposition to the customer.

While first-gen cloud storage services offer cost and operational advantages over traditional on-premises storage solutions, they are still too expensive, complicated and slow-performing for many applications.

### LIMITATIONS INCLUDE:

- **Costly and confusing service tiers** – legacy cloud vendors sell several different types (tiers) of storage services. Each tier is intended for a distinct purpose—primary storage, backup storage or long-term retention. Each has unique performance and resiliency characteristics, SLAs and pricing schedules. Complicated fee structures with multiple pricing variables make it difficult to make educated choices, forecast costs and manage budgets.
- **Poor performance** –first-generation cloud storage services deliver significantly **slower read/write speeds than traditional on-premises storage platforms** (it takes much longer to move data in and out of the cloud) and are not well suited for data hungry, delay-sensitive applications like advanced analytics.
- **Vendor lock-in** – **each service provider supports a unique, proprietary API.** Switching services is an expensive and time-consuming proposition, requiring businesses to rewrite or swap out existing storage management tools and apps.

## Cloud Storage 2.0: Eliminate Cost and Complexity

Cloud Storage 2.0 represents a new breed of cloud storage services, designed from the ground up for the era of big data and digitalization. Most Cloud Storage 1.0 services are simply implemented on top of Windows or Linux and aren't engineered to optimize disk utilization and read/write performance. **Cloud Storage 2.0 services are specifically designed to make optimal use of storage capacity and to maximize read/write speeds.** Rather than leveraging native OS functionality, these next-generation services take direct control of the heads on the disks to pack data in ways that are radically different from traditional operating systems.

### Take Away

With Cloud Storage 2.0, you consume what you need, on-demand, and pay the bill at the end of the month.

Cloud Storage 2.0 services deliver groundbreaking pricing, performance and simplicity, eliminating the cost and complexity of both conventional on-premises solutions and first-gen cloud-based storage services. **With Cloud Storage 2.0, you purchase storage just like any other common metered utility—electricity, natural gas, water.** You consume what you need, on-demand, and pay the bill at the end of the month. You no longer have to think about which data you want to collect, and which tier you want to store it in.

The differentiating attributes of Cloud Storage 2.0 include:

- **Commodity pricing** – unlike traditional cloud storage services with confusing storage tiers and complex pricing schemes, next-generation cloud storage services are incredibly easy to understand and extraordinarily economical to scale. One product, with straightforward and ultra-low pricing, supports a wide range of applications.
- **Superior performance** – Cloud Storage 2.0 services deliver significantly faster read/write speeds than legacy cloud storage services and are better suited for data intensive, delay-sensitive applications like advanced analytics.
- **Compatibility** – Cloud Storage 2.0 services are compatible with legacy cloud storage services so you can avoid vendor lock-in and continue to use your existing management tools and practices.
- **Freedom of choice** – you choose when to switch cloud providers. No technical constraints or crippling egress fees should keep you tied to a provider forever!

## CHAPTER 3: RISKS ASSOCIATED WITH CLOUD-TO-CLOUD MIGRATION

You could be forgiven for thinking that moving workloads between clouds is a straightforward affair. The reality is that each cloud is different and **simply performing a drag and drop between clouds is not quite so simple.** Moving up to petabytes of data between clouds requires genuine expertise and experience to ensure a smooth migration without data loss and the risk of failure.

### Take Away

Moving up to petabytes of data between clouds requires genuine expertise and experience.

Here are some of the most common challenges a company can face when it comes to cloud:

### 1-Migrating Workloads

Transferring data between different cloud providers is complex and requires detailed planning and process. In the same way as an on-prem transfer to the cloud, data is transferred over the internet. These transfers of course need secure connections between the source cloud and target cloud.

We should mention here that **performing an intermediate migration back to on-prem is not an option when moving hundreds of terabytes of data.** You would need at least double the time and additional costs provisioned to store and manage your data on-prem. Cloud data needs to transit directly to its new destination.

Data download speeds can bring additional costs. **There can even be massive transfer costs of moving the data out of or into a cloud.**

## 2-Adapting to the New Cloud Environment

Shifting your data to a new cloud storage is a means towards an end. Your data is also very much alive and in use by your teams and applications. **It is very likely that your company apps are custom-built for a specific cloud provider.** But when migrating to another provider, there might be some issues in adapting these customizations to the new cloud's capabilities. For this situation, we need to anticipate the time required to reconfigure apps before harnessing the benefits of the new platform.

## 3-Reduce Downtime

When migrating data from one cloud to another, downtime is a big risk. It's essential to ensure data consistency, check and prepare cloud accessibility at every step, and prepare for the possibility of internal applications being unavailable during the migration. Preparing for downtime does not mean it will happen. But just in case, make sure you have a plan B.

## 4-Budgeting and Timing

Consider your past experiences of migrating data to the cloud, and the time and costs associated with this operation. Initial plans and estimates are often highly understated. **There's no reason for a cloud-to-cloud migration project to be a walk in the park either.** The main difference is that by now, you have a better understanding of cloud service offerings and their various pricing models. But you are still facing a lot of unknowns. Experimenting with some data movement tests to study the impacts on costs might be a wise move.

Many challenges can occur when migrating from one cloud to another. **Fortunately, each problem has a solution when working with experienced partners and flexible solutions** like Miria for Migration and a flexible, high performance cloud storage like Wasabi. Thanks to Miria's unique mix of features, you can move your workloads to another cloud without jeopardizing applications or data and, perhaps more importantly, day-to-day business operations.

# CHAPTER 4: GET YOUR CLOUD-TO-CLOUD MIGRATION STRATEGY RIGHT

Behind every strategy is a water-tight plan! Here are the seven steps to ensure you get it right first time and every time:

## 1-Identify the Business Requirements

A cloud-to-cloud migration may initially seem as complex and as time consuming as the initial move to the cloud. You may legitimately wonder if it is worth the effort. If your reason was to save money and time, enhance business opportunities, improve reliability and performance – then the question is: why NOT switch providers to increase the benefit for your business? Also, **the longer you spend creating and storing data and adding applications with one provider, the more difficult it is to change.**

### Take Away

#### Clear and obtainable goals

Measure your goals before, during and after the data migrations. Do not wait.

Cloud-to-cloud migration: what is in it for you? Cost savings? Better performance? More freedom? Is it a must do because of a new legal or business constraints? Clearly identifying the reason why you need to migrate to another cloud provider is an important component of your migration plan.

You probably heard about **SMART goals** before: Specific, Measurable, Achievable, Realistic, and Timely. **These goals can and should apply to cloud-to-cloud migration projects!**

## 2-Assess Data Sets and Map the Migration

This step involves:

- **Assess the different data sets to be migrated.**  
It is likely different user groups in your company are storing their data in this cloud. **You need to identify each of them and their respective business owners.**
- We recommend producing some criteria for double checking data sets post migration for user and application access, and for data integrity.
- **Map your project in different stages.**  
Moving large data sets between storages is a long process. You will need to calculate in days not in hours. As you probably do not want to stop your production platforms in the cloud, it's certain that new users and new data will be added during the migration. **Our migration experts recommend splitting the project into multiple steps**, one data set at a time. Each step comprises an initial test, intermediate checks and multiple migration runs before a final cycle and the sign off with a final check.
- **Provision migration nodes.**  
Once the data sets are identified, build a table that summarizes the number of files and associated objects. This table gives you a starting point for planning your migration. Our migration experts recommend performing a few migration tests with chosen data subsets to evaluate the migration workload: typically, one test for office documents, another for radiographic images or PACS, another for large 4K videos, etc. This will give you the input needed to **calculate the number of data mover servers required to move each data set** and provide a raw estimate of your global migration workload.

**It is also the time for scheduling the migration:** roll-out period, import frequency, operational times... Ideally, the business teams will be involved in this stage to reduce the impact on their activity and to automate as many operations as possible, to reduce the risk of error.

## 3-Prepare the Data for Migration

Our migration experts recommend a three-step process, no specific order here, but no corner-cutting allowed!

- **Audit data sets - No need to migrate data sets that no one will never use again.** So spend a few hours with business teams to audit each data sets for use by human beings or applications. Whether you are planning a complete migration or data consolidation, now is the time to clean up the files and straighten out their organization. This operation involves:
- **Analyze the structure of the source data storage:**
  - Number of folders and items per folder and correcting the storage architecture if necessary.
  - Deleting duplicates and legacy elements - no need to transfer bad habits;
  - Establishing format standards and rules for naming files;
  - Double checking formats for compatibility in both cloud storages (the devil is in the detail)
- **Access rights:** These will need to be recreated on the target cloud storage. Again, they must be audited and captured for both humans and apps.



- **Secured data path:** When migrating to the cloud, **security and IT teams remain responsible for corporate data and customer information protection.** Management will deem finger pointing and breach disputes unacceptable. Technical teams must ensure a full security view across hybrid architectures, respond rapidly to vulnerabilities and threats, and provide regular audits. Adding workloads to a public cloud increases security complexity. To ensure security in a hybrid cloud environment, organizations need complete views of user identity and behavior at every application and database access point.

## 4-Choose the Best Tool for a Complex Data Migration Project

The market for migration support software is in full expansion mode. However, many tools quite simply do not have the capacity to handle several petabytes of data in complex and heterogenous environments. Some are proprietary to one specific cloud, others may be too expensive and designed with major international groups in mind.

Miria for Migration from Atempo makes storage migration available to all organizations and all IT environments.

Miria:

- Automates the migration process and generates reports throughout the operation.
- Manages several petabytes of data safely and securely.
- Rapidly detects changes or additions in your very extensive tree structure - only Miria's FastScan can do this within the time constraints.
- Adapts to a wide choice of file systems as it maintains the ACLs (Access Control Lists).
- Spans both cloud storage and SAN or Shared File Storages such as NetApp, Dell / EMC Isilon / ECS, Qumulo, Lustre, DDN ExaScaler, IBM Spectrum Storage, Panasas, object storage, etc., independent from suppliers, Miria makes migration between different storage platforms possible.
- Allows Data Movers roll-outs on demand to make data migration quick, scalable and accommodate multi-storage solutions.

## 5-Run a Data Migration Pilot Test

A field test is part of the migration process recommended by Atempo. Data management experts define the pilot test scope and launch the migration in real time.

It is also an opportunity to **implement the security backups and other risk management measures**, to eliminate any data loss.

To paraphrase a well-known guideline used in many agile processes: Test often, test early!

## 6-Implement the File Migration Project

Most migration solutions cannot shorten the operational schedule. They monopolize storage bandwidth to the great displeasure of end-users. The tricky management of both the migration and its impact on business increases the risks of a production malfunction.

Miria for Migration has an innovative approach.

- Migration takes place over selected timeframes. Its use of bandwidth can be reduced or on the contrary pushed to saturate a 10 GB network (for example) to accelerate file transfer.
- The files remain accessible for analysis or processing throughout the migration.
- **In every automatic migration cycle, the tool detects the modified files in the source storage.** It implements incremental synchronization with the target storage until both storage devices converge.

The automated processes and data flow management mean **the migration is finalized in a few hours**, or even a few minutes, after convergence.

## 7-Check the Data Migration

No file migration project is complete without a precise assessment of the target storage. This involves:

- An inspection of the target storage by the storage manager and the migration consultants.
- A test of the migrated data, using predetermined test scripts (location, access rights, etc.).
- The assessment of end-user satisfaction, the control of user access by using the business requirement specification document from the launch of the migration project.

**Miria for Migration generates automatic reports throughout the migration project.** This makes assessing the project's success even easier.

Cloud migration is not without its difficulties. IT management must ensure they keep a handle on their increasingly complex hybrid digital business infrastructures. Solid internal & external resources and the right data migration software are key to success.

# ABOUT WASABI

## Wasabi Hot Cloud Storage

Wasabi Hot Cloud Storage is a Cloud 2.0 storage solution. It delivers all of the above benefits and also provides strong data protection and security.

Wasabi hot cloud storage is engineered for extreme data durability, integrity and security. The service is built and managed according to security best practices and standards, and is designed to comply with a range of industry and government regulations including HIPAA, HITECH, FINRA, MiFID, CJIS, FERPA and GDPR.

- **Physical Security:** The Wasabi service is hosted in premier Tier IV data center facilities that are highly secure, fully redundant, and certified for SOC-2 and ISO 27001 compliance. Each site is staffed 24/7/365 with on-site security personnel to protect against unauthorized entry. Security cameras continuously monitor the entire facility—both indoors and outdoors. Biometric readers and two-factor or greater authentication mechanisms secure access to the building. Each facility is unmarked so as not to draw attention from the outside.
- **Secure Network Architecture:** Wasabi employs advanced network security elements, including firewalls and other boundary protection devices to monitor and control communications at internal and external network borders. These border security devices segregate customers and regulate the flow of communications between networks to prevent unauthorized access to Wasabi infrastructure and services.
- **Data Privacy and Security:** Wasabi supports a comprehensive set of data privacy and security capabilities to prevent unauthorized access and disclosure.

Strong user authentication features tightly control access to stored data. Access control lists (ACLs) and administratively defined policies selectively grant read/write and administrative permissions to users, groups of users, and roles. Wasabi encrypts data at rest and data in transit to prevent leakage and ensure privacy. All data stored on Wasabi is encrypted by default to protect data at rest. And all communications with Wasabi are transmitted using HTTPS to protect data in transit.

- **Data Durability and Protection:** Wasabi hot cloud storage is engineered for extreme data durability and integrity. Wasabi provides eleven 9s object durability, protecting data against hardware failures and media errors. In addition, Wasabi supports an optional data immutability capability that protects data against administrative mishaps or malicious attacks. An immutable object cannot be deleted or modified by anyone—including Wasabi. Wasabi data immutability protects against the most common causes of data loss and tampering including accidental file deletions, viruses and ransomware.
- **GDPR Compliance:** For customers who have to comply with GDPR, storing data in a Wasabi European data center is the recommended option. Buckets must be created in a storage region based in the EU to have that bucket reside in the EU. The Privacy Shield Framework does not apply in this case.

# ABOUT ATEMPO

Atempo is a leading independent European-based software vendor with an established global presence providing solutions to protect, store, move and recover all mission-critical data sets for thousands of companies worldwide. With over 25 years' experience in data protection, Atempo offers a complete range of proven solutions for physical and virtual servers' backup, workstations and migration between different storages of very large data volumes. Atempo's three flagship solutions, Lina, Miria and Tina are labeled "As used by French Armed Forces" and "France Cybersecurity".

Selected to join the initial selection of the "French Tech 120", a government program designed to nurture 25 unicorns by 2025, Atempo is headquartered in Paris and is present in Europe, the US and Asia with a partner network in excess of 100 partners, integrators and managed service providers.

## 1-Significant Data Migration Expertise

Over the years, Atempo has provided its customers with advanced data protection and data movement solutions. Our software has evolved from its backup and archiving foundations to include high capacity and secure data movement functionality. Atempo's solutions and services enable organizations of all sizes to migrate their data between storages (on-prem, to cloud and cloud-to-cloud). With our partner ecosystem, we assist our customers with their migration projects between a multitude of storage vendors and cloud providers particularly large-scale migrations up to tens of thousands of TBs.

## 2-About Miria Data Management Solution Software

Miria is a software solution that provides backup, archiving, synchronization, migration and copy solution specific to unstructured data and very large volumes - petabyte files and storage:



## 3-Backup & Archive for Storage

Petabyte-scale volumes and billions of files should not make the backup and recovery of file data sets more complex! Here are the two top reasons why you should consider using Miria for Backup or Archive:

- If you have millions or even billions of files on a given cloud storage or file storage (AWS, NetApp, Dell/EMC Isilon, StorNext, Qumulo, Lustre, ...) and you need a flexible restore solution for both daily incidents and Disaster Recovery.
- If using AWS, Lustre or a GPFS shared file system and you are unable or barely able to run a full storage backup.

## 4-Migration of Large-Scale File Sets Between Platforms

When considering the migration of massive file-based data sets (>100 TB to multiple PB) between different storage manufacturers or storage types, here are 3 typical situations for using Miria for Migration and getting your file storage migration project under control.

- Migrate several hundred terabytes or even petabytes of file data from a large scale-out NAS to another storage in a different location.
- Migrate your massive file sets from one storage to another type of storage (On-Prem to Cloud, Cloud to On-Prem, Cloud to Cloud, or NAS to NAS, from Isilon to Lustre, or from GPFS to Isilon for example).
- Achieve fast data transfer for a large number of unstructured files in a limited period of time.

## 5-Data Movement Between Different Storages

Synchronizing full storages between different manufacturers (Isilon, NetApp, GPFS, Lustre and more) or different technologies (Cloud to NAS) is a frequent request in many different IT teams. Here are 3 reasons to choose Atempo Miria to synchronize or move file-sets between petabyte- scale storages. You need to:

- Keep a large number of files to keep in sync with big daily changes. On many platforms, Miria leverages Atempo's FastScan capability to quickly identify the list of changed & new files on the storage. No need to wait for days to start moving files.
- Move files between different technologies or vendor storages. Data is collected on source storages and converted automatically to the right format on target storage. Storage list includes any NAS or file storage (CIFS/NFS), parallel and distributed filesystems such as Lustre or GPFS and many other including object storages and cloud.
- Sync on-demand for one or more file storages. Miria data synchronization solution offers four levels of sync, ranging from one-way replication with or without replication of deletions, selective one-way replication of a file subset, and full bi- directional replications.

## Wasabi Hot Cloud Storage

Wasabi provides simple, predictable and affordable hot cloud storage for businesses all over the world. It enables organizations to store and instantly access an infinite amount of data at 1/5th the price of the competition with no complex tiers or unpredictable egress fees. Trusted by customers worldwide, Wasabi has been recognized as one of technology's fastest growing and most visionary companies. Created by Carbonite co-founders and cloud storage pioneers David Friend and Jeff Flowers, Wasabi has secured \$140 million in funding to date and is a privately held company based in Boston.



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