

EBOOK

# A Strategic Approach to Data Storage

How to choose the right solution to get the most out of unstructured data.



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# Introduction

We live in unprecedented times when it comes to data.

Every second, billions of bytes are being created around the world. Most of this data is “unstructured,” meaning information from things like social media, sensors, photographs, videos, and other products from our always-connected lives.

As the sheer amount of this data has increased, organizations have been racing to figure out how to turn it into new streams of revenue, value, and a competitive advantage. But in order to do this, you must first figure out how to organize and store vast amounts of information. **That’s where data storage comes in.**

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In this eBook, you’ll learn:

- Modern data storage essentials
- On premises vs public cloud vs hybrid storage
- Aligning data storage with your business goals
- Recommended solutions for object and block storage



| A Strategic Approach to Data Storage



# Modern data storage essentials

## There are four components to every data platform. These are: Ingestion, Storage, Compute, and Presentation.

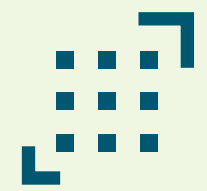
To dig a little deeper into each of these components:

- **Ingestion** is all about understanding where your data is entering your platform
- **Storage** is where your data actually lives and where it is organized
- **Compute** is what powers your workloads using data
- **Presentation** is how you display any insights you derive from data





## While every business has different data storage needs, for a storage solution to be modern it must meet two basic requirements.



### Ability to scale

Modern data storage needs to scale up and down depending on the amount of data you are ingesting. In other words, it needs to be flexible enough to handle sudden influxes of information without forcing you to incur ongoing costs when data flows are slowed or data is not currently being used by workloads.



### Ability to handle concurrency

Workloads you're planning to run will require some significant processing power. In addition, you're probably going to need to be able to run multiple workloads at the same time.

# Aligning data storage with your business goals

► Aligning data storage with your business goals

**In a world of digital transformation, your data is the core component to driving business value. That means your chosen storage solution needs to align with your business goals.**

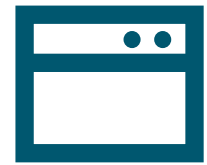
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When considering which storage solution to choose, consider the following questions to understand how it will support your objectives.

- 1. What applications will you be running?**
- 2. What value does the application provide the business?**
- 3. How will the cost of the data storage solution be weighed against the value it provides to your business?**
- 4. Where will you store and compute data?**
- 5. What is your comfort level with managing storage assets?**
- 6. What are your governance issues?**



► Aligning data storage with your business goals



## What applications will you be running?

Data storage is all about facilitating your ability to compute. You need to understand your processing requirements to choose the right solution.

Take facial recognition, for example, which is dependent upon artificial intelligence (AI) and machine learning (ML) in order to be effective. In order for these two tools to work properly, you will need incredibly fast storage.



## What value does the application provide the business?

When determining the value of an application to your business, utilize these two metrics: Recovery Point Objectives (RPOs) and Recovery Time Objectives (RTOs).

**RPOs** identify how much data a business can afford to lose if they have a system failure. If you can't afford to lose more than two seconds of data, you'll need to invest significant time and resources into creating a stable storage infrastructure.

**RTOs** define how quickly you need to return to normal operation if the application goes down. Again, the faster you need to return to operation, the more important the application—and the more you should invest in storage.

► Aligning data storage with your business goals



## How will the cost of the data storage solution be weighed against the value it provides to your business?

Let's consider something like Google Search. One of the reasons it became so powerful and widely adopted is because it is able to return a result in microseconds.

The cost to be able to implement a system like that is much higher than something that could return a result in a few seconds. But because the time saved from returning results meant more customers adopted the platform, the cost was well worth it to Google.



## Where will you store and compute data?

There are three locations where you can place your storage and compute resources, and each is going to result in a different storage solution.

You need to decide whether you're going to place your platform on premises, in the public cloud, or in a hybrid solution. We'll go more into detail on these options in a moment.

► Aligning data storage with your business goals



## What is your comfort level with managing storage assets?

To choose a data storage solution, it's vital to understand how you will manage your storage assets.

For example, will it be through a traditional GUI interface, a standard Command Line Interface (CLI), or through a more modern approach like an API?



## What are your governance issues?

Finally, you need to make sure your data storage solution is structured in a way that will enable any required governance processes to take place.

Businesses operating in Europe that must comply with the requirements of GDPR is one of the most frequently used examples of this.

# On premises vs. public cloud vs. hybrid

► On premises vs. public cloud vs. hybrid

Getting back to the decision on where your data storage solution will be located, one of the major drivers of your decision will likely be cost. Here's what that means for each of the potential locations:

## On premises

An on-premises storage solution will be the most cost-effective if you have a very good understanding of the application needs and can clearly map the growth of your data. This type of precise understanding means that you're going to be able to affordably price an on-premises solution that specifically meets your needs.

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## Public cloud

If you have very elastic data storage needs, then the public cloud may be the right solution. Public clouds allow you to pay for the storage you need at any given time, and you can grow and shrink your capacity on demand. It doesn't make sense to build an on-premises data storage solution for peaks in data usage if they are going to vary widely.

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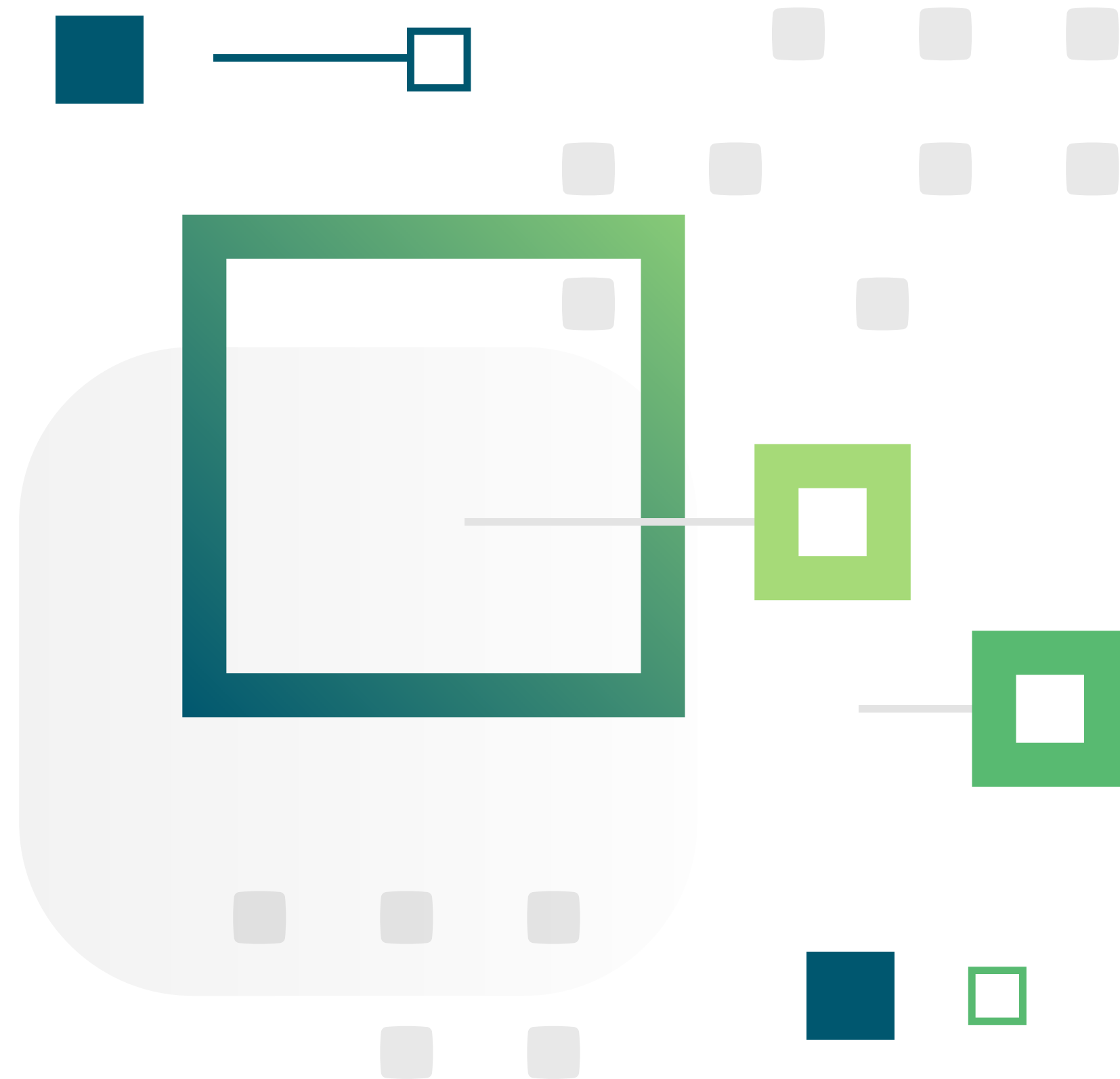
## Hybrid

It's possible to get the best of both worlds by running on-premises equipment that manages a very specific capacity, then pushing workloads to the public cloud whenever there needs to be a rapid increase in capacity.

# Recommended solutions for object and block storage



► Recommended solutions for object and block storage



**Object storage is the practice of dividing data into self-contained units (objects) in a flat environment.**

This means no folders or sub-directories. Instead, objects contain metadata that assists processing and usability.

► Recommended solutions for object and block storage

**Block storage, in contrast, involves breaking data into fixed blocks and then storing them separately with unique identifiers.**

This is the general storage architecture for hard disk drives and data that is updated frequently.

Whether you go with object or block data architecture will depend upon your compute requirements. For each architecture, there are a few options we often recommend. This is by no means a complete list, and if your organization has unique needs for data storage, we're happy to walk you through the wide range of available options.



- ▶ Recommended solutions for object and block storage

## Object storage

### Dell EMC Isilon

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Isilon is Dell's scaled-out NAS platform. It's ideal for businesses that are storing large amounts of enormous files. Isilon performs well and provides the flexibility to scale out as the business generates more data and adds more workloads.

### Qumolo

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Qumolo's object storage solution isn't as feature-rich as Dell's, but it is easier to access analytics for what's happening in an object cluster so that you can understand why you aren't able to achieve your desired performance levels.

- ▶ Recommended solutions for object and block storage

## Block storage

### Dell EMC VMAX

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VMAX is Dell's most powerful platform. It has the best uptime of any storage product and has the ability to scale out as needed. It's a great fit for enterprise-level datacenter customers, and can be depended upon to decrease the risks of an outage.

### TerraBlock Storage

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TerraBlock's value comes from the fact that they're able to layer their software on top of hardware from many different vendors. This allows them to perform well with many different media types. It also means that you are able to take advantage of hardware advances faster than you would if your hardware and software were tethered together.



► Recommended solutions for object and block storage

## Conclusion

If your business is facing a tsunami of unstructured data, you will need a platform capable of keeping up. This makes choosing the right data storage solution critical to your success.

By selecting the right storage, you'll be able to support the applications essential to your business without drastically overspending. If you need an expert partner to help you through the process of choosing the right platform, Redapt can help. We have significant experience modernizing data storage infrastructure for businesses of all sizes, from enterprise on down.

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For help developing a clear path forward to a data storage solution that will prepare your business for its next big growth phase, schedule some time with one of our data storage experts by clicking [here](#) or by calling (425) 882-0400.



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