

THE MORE YOU STORE, THE MORE YOU SAVE



CARBONIO

# STORAGE MANAGEMENT

SAVE SPACE, SAVE MONEY



ZEXTRAS<sup>®</sup>

# TABLE OF CONTENTS

- 1. Why the ROI of Software Matters .....3
- 2. How Zextras Carbonio Helps You Save Money .....4
  - 2.1 Compression .....5
  - 2.2 Deduplication.....8
  - 2.3 Hierarchical Storage Management ..... 12
  - 2.4 Object Storage Integration..... 15
- 3. Practical Cases..... 18
  - 3.1 Use Case 1 ..... 18
  - 3.2 Use Case 2 ..... 20
- 4. Conclusions..... 22

# Why the ROI of Software Matters

2020 was tough, and one of the most critical drivers for Tech professionals for 2021 was **keeping the software investments under control**. According to Gartner<sup>1</sup>, IT spendings are growing quickly again, but the funds are coming from other departments and IT role is becoming more and more central in organizations' growth. On the other hand, software purchases will imply more requirements and must be justified.

In the first place, IT departments have to assure

1. **Software quality** - we've got you covered<sup>2</sup>
2. **Fair cost** – Again, count on us<sup>3</sup>
3. The **Return On Investment** – Spoiler: we can provide it to your company. Just keep reading!

It is not only a matter of features and productivity anymore. Any new product purchase will have to make sense also for the overall business. This is why, in a crucial moment like this, when the CTO, IT managers, and the CFO are sitting at the same table, while outside the windows Covid-19 still ravages, we thought **you needed this guide from us**.

It is increasingly important to **justify IT expenses**. You win when a cost brings an economic advantage to your company (ROI).

**We can prove that Carbonio will make you save more than its cost.**

**With this paper, you'll learn how Zextras Carbonio helps you cut down the massive expenses of storage devices by a smart storage management system.**

<sup>1</sup> (2021, April 7) Gartner Forecasts Worldwide IT Spending to Reach \$4 Trillion in 2021. <https://www.gartner.com/en/newsroom/press-releases/2021-04-07-gartner-forecasts-worldwide-it-spending-to-reach-4-trillion-in-2021>

<sup>2</sup> (2020) Customer Survey done on 3000 active customers.

<sup>3</sup> Our product is designed to give each customer the flexibility they deserve.

# How Zextras Carbonio Helps You Save Money

Zextras Carbonio helps you save money in several ways:

## Compression

Stored objects can be set to be automatically compressed that includes e-mails, attachments, and saved files.

## Deduplication

Automatically remove unnecessary file copies that take the precious space you can put to good use.

## HSM

Using hierarchical storage management you can choose different storage solutions flexibly and decrease storage costs by mixing and matching different solutions. More about that in the following pages.

## Object Storage

An excellent technology nowadays and a reliable choice for scalability. Integration of object storage makes it possible to use cloud storage solutions to store your data.

The above technologies are all crucial for you to cut down the costs of storage devices. The right mix of these factors is what makes your company save more money than the cost of Zextras Carbonio itself.

**ZEXTRAS CARBONIO PRICE < STORAGE COST SAVING**

Beyond that, Zextras Carbonio, as a completely private platform, assures you **100% security** for your data by its design. Moreover, object storage technology makes it possible to benefit from **private cloud storage solutions**, which are **reliable**, more **economical**, and **scalable**, without compromising privacy.

# Compression

Storing a corporation's data and its backups that rapidly grow to an incredible size costs you new expensive storage devices, unless you take advantage of data compression.

**Zextras Smart Storage Management** introduces a **real-time compression** through the gzip algorithm. It automatically performs compression on your data.

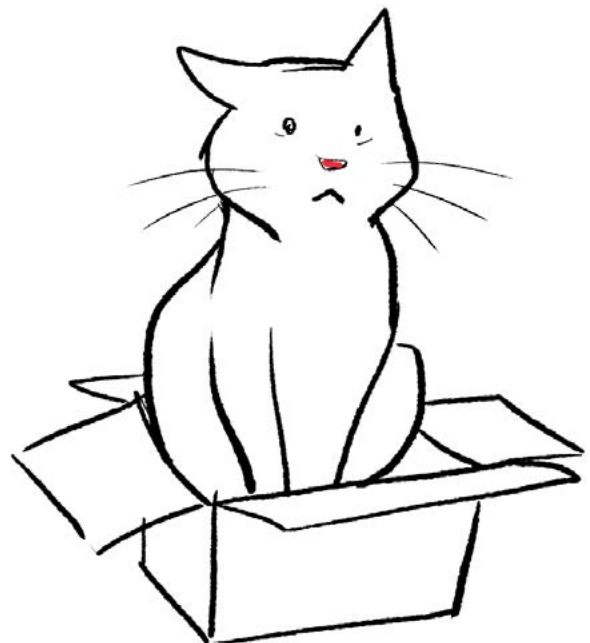
Theoretically, the compression ratio of this method can be as high as 10:1, saving up to 90% of the space.

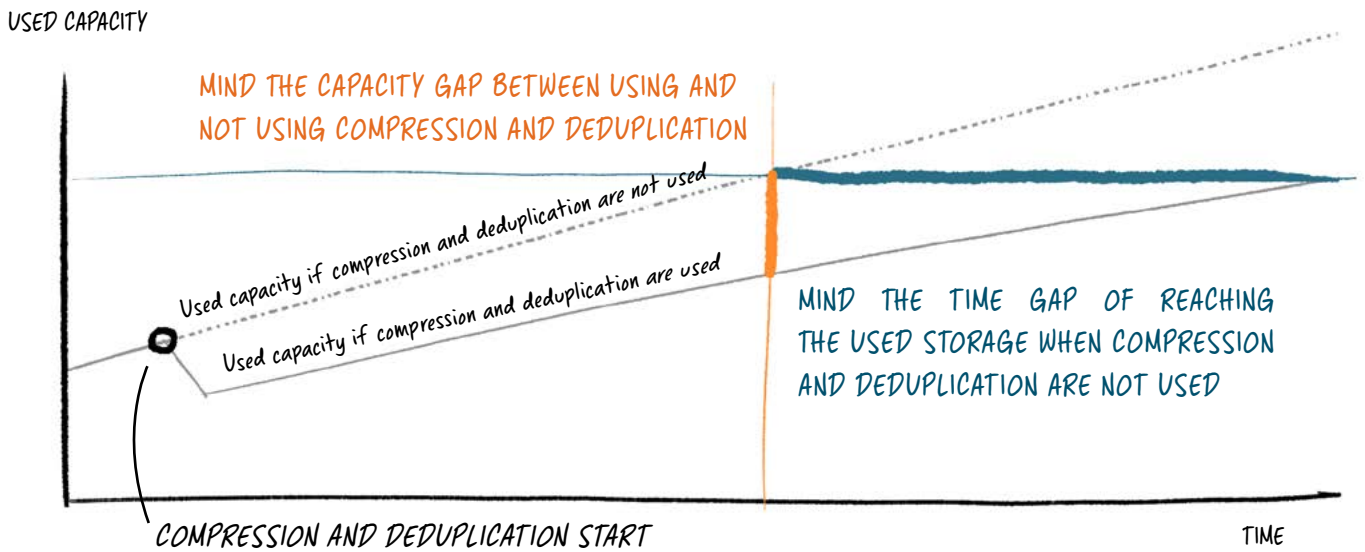
The final compressed size may vary based on many factors so that no one can give a precise percentage. Nonetheless, real-life experience has shown that applying compression to file formats on e-mail servers (mainly text) **on average saves around 35% of the used space.**

## Why you need Compression

Compression:

1. Allows you to use your storage space more **efficiently**.
2. Immensely **delays** the need for storage expansion.
3. Gives you more time to **better estimate** your needs for expansion.





## Savings Thanks to Compression

Let's calculate how much saving you can achieve thanks to Compression:

$$\text{Savings Delivered by Compression} = \text{Cost of Storage} \times \text{Space Saving}$$

$$(\text{Space Saving} = 1 - \text{Compression Ratio}^{-1})$$

- **Savings Delivered by Compression** is the profit you earn using compression.
- **Cost of Storage** is the storage expenses including the price, maintenance, etc.
- **Space Saving** is the storage size you free up after compression relative to the uncompressed size.
- **Compression Ratio** is the proportion of space needed for uncompressed data to space needed for compressed data, for example, a 5:1 compression ratio means that 5 units of data (for example, 5 TB) are stored in 1 unit of disk space (for example, 1 TB).

## Compression - Scenario

Let's calculate the savings delivered by compression of 1 TB of data, with these assumptions:

- The compression ratio is 1.54:1 (based on the properties of the data),
- The average cost of storing 1 TB of data is \$3,000 a year (including maintenance costs<sup>1</sup>).

Based on the assumptions above, after the compression, the required storage would reduce to 0.65 TB eliminating the need for an additional 0.35 TB, **saving 35% of the cost.**

### Savings Delivered by Compression = Cost of Storage × Space Saving

$$= \text{Cost of Storage} \times (1 - \text{Compression Ratio}^{-1})$$

$$= 3,000_{(\$/\text{Year per TB})} \times (1 - 1.54^{-1})$$

$$= 3,000_{(\$/\text{Year per TB})} \times 0.35$$

$$= 1,050_{(\$/\text{Year per TB})}$$

- Total estimated cost **without compression** = **3,000**  $_{\$/y}$  for each TB of data,
- Total estimated cost **with compression** = **1,950**  $_{\$/y}$  for each TB of data,
- **Savings** = **1,050**  $_{\$/y}$  for each TB of data.

<sup>1</sup> [IT Key Metrics Data 2019: Key Infrastructure Measures: Storage Analysis: Current Year](#)  
[IT Key Metrics Data 2019: Key Infrastructure Measures: Storage Analysis: Multiyear](#)

# Deduplication

Given the explosive growth of information, data deduplication plays a vital role in bearing the cost.

Carbonio's smart storage management introduces item deduplication that **stores each item only once** and references it multiple times, which leads to **huge saving space**.

Unlike **rudimentary deduplication** methods which are tied to a **limited cache**, Zextras Carbonio's deduplication **continues to work regardless of any cache or timing**.

Data deduplication plays a vital role in **affordability**, considering the explosive growth of data nowadays.

Cost savings is one of the important benefits of deduplication. Among its other benefits, we find **reducing the expenses** of storage equipment and floor space, **power consumption** for cooling, and **labor**, as there is less equipment to operate and manage.

This **increase in efficiency and effectiveness** of the storage helps corporations to **remove constraints on data growth**, improve their **service levels** leading to improve their **competitiveness**.

The amount of duplicated data in an environment can vary by the characteristics and access patterns of the data.

Nonetheless, you can have a rough idea of your environment's potential to create duplication. For example, **files created by office employees** often contain **redundant data** and are frequently **distributed or copied**.

This is true especially for a big organization that sends emails internally to all the employees. Such environments can benefit the most from Deduplication.

## Why you need Deduplication

Deduplication:

1. **Frees up** storage space to be used more efficiently.
2. **Eliminates** the need for regular storage expansion.
3. **Improves** your server performance.





## Storage saving thanks to Deduplication

Let's calculate how much saving you can achieve thanks to Deduplication:

$$\text{Savings Delivered by Deduplication} = \text{Cost of Storage} \times \text{Space Saving}$$

$$(\text{Space Saving} = 1 - \text{Deduplication Ratio}^{-1})$$

- **Savings Delivered by Deduplication** is the profit you earn using Deduplication.
- **Cost of Storage** is the storage expenses including the price, maintenance, etc.
- **Space Saving** is the storage size you free up after deduplication relative to the original size.
- **Deduplication Ratio** is the proportion of logical data to physical space needed to store the Deduplicated data, for example, a 5:1 Deduplication ratio means that 5 units of logical data (for example, 5 TB) are stored in 1 unit of physical disk space (for example, 1 TB).

## Deduplication - Scenario

Let's calculate the savings delivered by deduplication of 1 TB of data, with these assumptions:

- The deduplication ratio is 1.11:1 (based on the number of the objects),
- The average cost of storing 1 TB of data is \$3,000 a year (including maintenance costs<sup>1</sup>).

Based on the assumptions above, after the deduplication, the required storage would reduce to 0.9 TB eliminating the need for an additional 0.1 TB, **saving 10%** of the cost.

### Savings Delivered by Deduplication = Cost of Storage × Space Saving

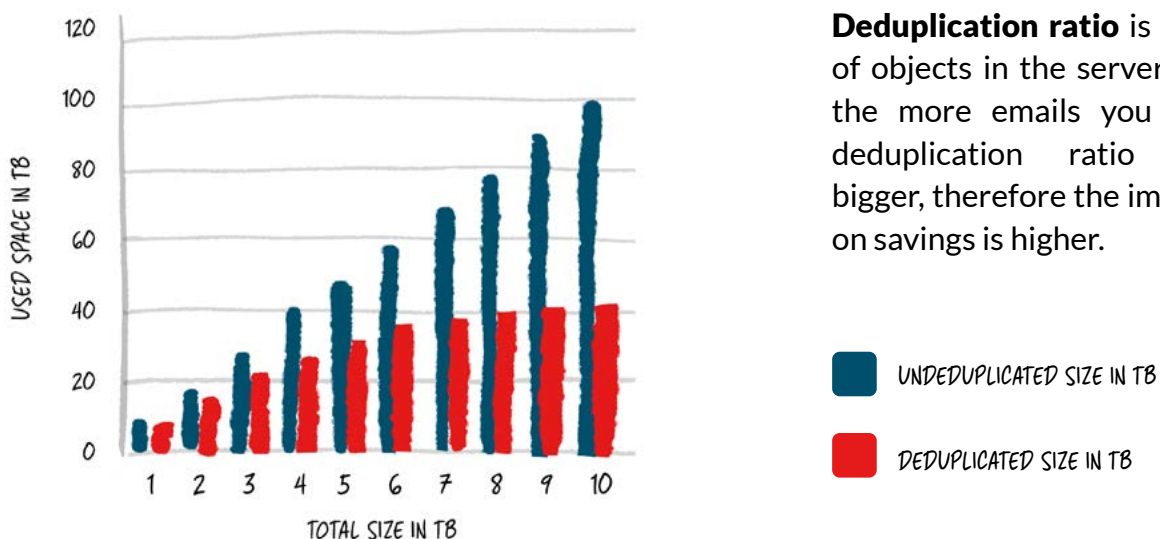
$$= \text{Cost of Storage} \times (1 - \text{Deduplication Ratio}^{-1})$$

$$= 3,000_{(\$/\text{Year per TB})} \times (1 - 1.11^{-1})$$

$$= 3,000_{(\$/\text{Year per TB})} \times 0.1$$

$$= 300_{(\$/\text{Year per TB})}$$

- Total estimated cost **without deduplication** = **3,000**  $_{\$/\text{y}}$  for each TB of data,
- Total estimated cost **with deduplication** = **2,700**  $_{\$/\text{y}}$  for each TB of data,
- **Savings** = **300**  $_{\$/\text{y}}$  for each TB of data.

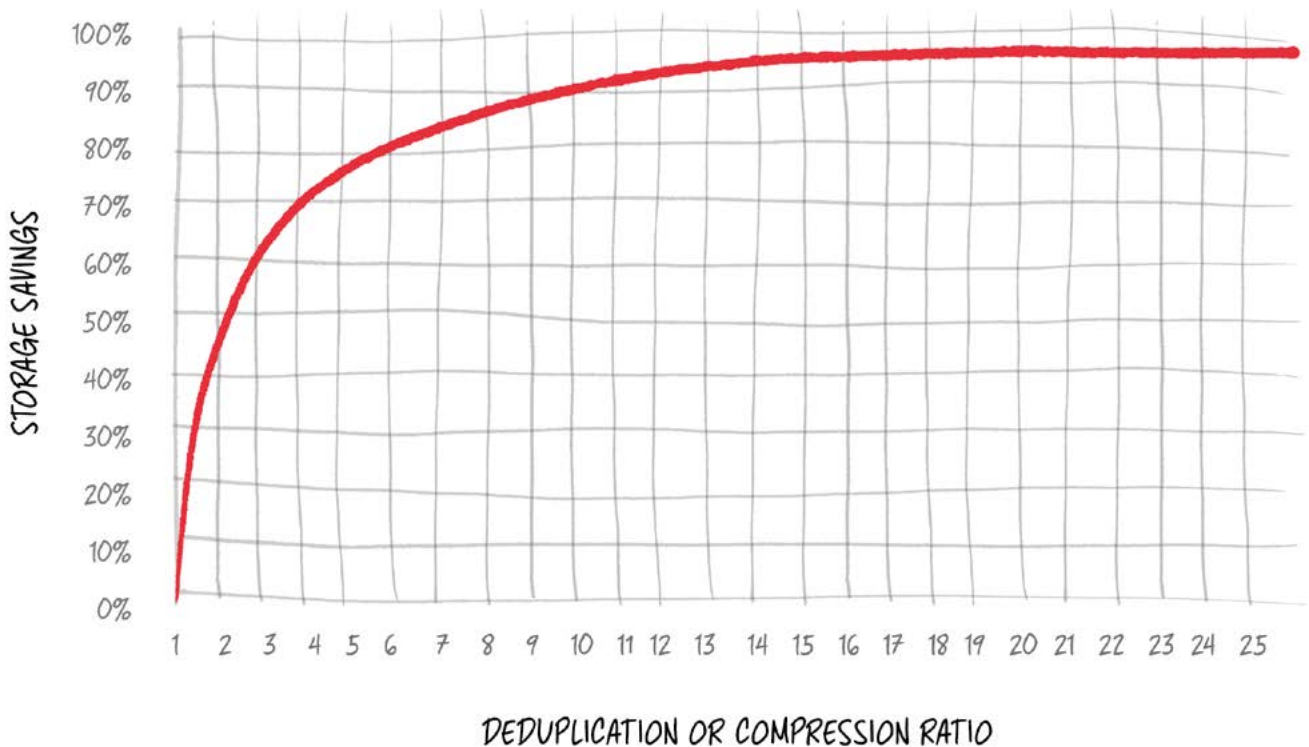


**Deduplication ratio** is a function of objects in the server. It means the more emails you have the deduplication ratio becomes bigger, therefore the impact it has on savings is higher.

<sup>1</sup> [IT Key Metrics Data 2019: Key Infrastructure Measures: Storage Analysis: Current Year](#)

[IT Key Metrics Data 2019: Key Infrastructure Measures: Storage Analysis: Multiyear](#)

## Little changes, big results



The degree to which deduplication impacts storage-saving is not very intuitive. The critical point is that you don't even need a crazy high deduplication ratio to achieve significant savings. As you see in the plot and the table, **even a tiny increase** in the deduplication ratio gives you **considerable savings** in terms of storage.

This rate of change is far more eminent in smaller ratios. It means that deduplication can be **beneficial even with a small ratio**.

Saving is a **factor of  $(1-r^{-1})$** , therefore for a deduplication ratio of 3, the saving would be  $2/3$  or approximately **66%**. Continuing this will give us the values in the table:

*The ratio of 1 means that there is no duplicated data to be deduplicated or data can not be compressed further. Therefore, there would be no storage savings.*

DEDUPLICATION OR COMPRESSION RATIO	STORAGE SAVING
2:1	50%
5:1	80%
10:1	90%
50:1	98%
100:1	99%
500:1	99.8%

# Hierarchical Storage Management

Not all data are accessed at the same rate and it can be cleverly used to save money.

The basic idea behind this is that **not all data is accessed at the same rate**. So why not putting the least frequently accessed data to **slower, cheaper storage** devices and the most accessed data to **faster, more expensive ones** in order to **save on the costs and improve user experience**?

Hierarchical Storage Management or **HSM** is a technology that allows us to **move data between storage devices based on a defined policy**.

The most common use of this technique is to move **older data** from faster-but-expensive storage to

slower-but-cheaper ones, since the older data is generally used less, the users won't experience any slowdown while it costs much less using slower storage.

Having a significant impact on the user experience is not the only benefit of HSM; it also reduces **the storage costs** for the corporation. In fact, not only will you end up saving on what you would have to spend on new and fast volumes, but also it will help you reduce structural costs by leaving the more current mail data on smaller space.

## Why you need HSM

All corporations are under pressure to meet the **exponential demand for storage capacity**. However, studies show that around **60% of data on the storage is rarely used** or even inactive.

It's extremely difficult to estimate the benefits of HSM on your environment. Actually, it's not a question of how useful HSM can be since its benefits have already been approved in practical situations several times, it's a matter of **how to obtain it** if the platform doesn't offer such functionality.



Manually achieving such features is difficult for your system administrators, and in the case of third-party solutions, there is no guarantee that they work uniformly. Zextras Carbonio provides you with a **fully operational HSM that works seamlessly** with other Carbonio components **right out of the box**.

Here are some examples, **HSM frees up resources by optimizing** the resources the company already owns **without the need to buy new hardware**. Consequently, it also saves money by moving the bulk of company data into a slower device, especially if your corporation manages a large amount of data.

**Saving time** is another crucial benefit that is usually neglected. Optimizing the delivery of data to the user has an evident time-wise impact on user experience. **Archiving backups on lower-level devices** as they are not frequently used **improves the chance of rescuing your data** if data is lost or damaged on frequently used devices.

## Storage savings thanks to HSM

Let's calculate how much saving you can achieve with HSM:

$$\begin{aligned} \text{Savings Delivered by HSM} &= \text{Data on Slow Storage} \times \text{Storage Cost Difference} \\ &= \text{Data on Slow Storage} \times \text{Cost of Fast Storage} \times (1 - \text{Cost Ratio}) \\ (\text{Cost Ratio} &= \text{Cost of Slow Storage} / \text{Cost of Fast Storage}) \end{aligned}$$

- **Savings Delivered by HSM** is the profit you earn using HSM.
- **Storage Cost Difference** is the difference between the cost of fast storage and slow storage per unit, including the price, maintenance, etc.

Another critical factor is the cost of transferring your data to different storage. One massive advantage of Zextras Carbonio is that you can perform a **live migration** to transfer your data. It means that you don't need to switch off the servers and bear **any downtime** for migration. With Zextras Carbonio, you can seamlessly migrate, upgrade, and grow your platform.

# Hierarchical Storage Management - Scenario

Let's calculate the savings delivered by HSM of 1 TB of data, with these assumptions:

- Recent emails make 20% of the total amount of data (Based on the policy you define indicating the time period of the emails that should be transferred to a low-level device),
- The average cost of storing 1 TB of data on your current storage is \$3,000 a year (including maintenance costs<sup>1</sup>),
- The cost of slower storage is 25% less than the current one.

Based on the assumptions above, you move 80% of the total data to a low-level device. Besides all the optimization benefits, it frees up 80% of the storage giving you the difference between the cost of the two storage devices. It is also useful considering the fact that the cost of storage devices will naturally decrease in the meanwhile. Also, it gives you more time to estimate how much more storage you will need.

Considering that the cost of the slower storage is 25% less than the faster one, we get:

## Savings Delivered by HSM

$$= \text{Data on Slow Storage} \times \text{Cost of Fast Storage} \times (1 - \text{Cost Ratio})$$

$$= \text{Data on Slow Storage} \times \text{Cost of Fast Storage} \times (1 - \text{Cost of Slow Storage} / \text{Cost of Fast Storage})$$

$$= 0.8_{(\text{TB})} \times 3,000_{(\$/\text{Year per TB})} \times (1 - 0.75)$$

$$= 600_{(\$/\text{Year})} \text{ for each TB of data}$$

- Total estimated cost **without HSM** = **3,000**<sub>(\$/Year)</sub> for each TB of data,
- Total estimated cost **with HSM** = **2,400**<sub>(\$/Year)</sub> for each TB of data,
- **Savings** = **600**<sub>(\$/Year)</sub> for each TB of data.

<sup>1</sup> [IT Key Metrics Data 2019: Key Infrastructure Measures: Storage Analysis: Current Year](#)  
[IT Key Metrics Data 2019: Key Infrastructure Measures: Storage Analysis: Multiyear](#)

# Object Storage Integration

Variable nature of an on-premise storage cost makes it almost impossible to evaluate while the cost of an object storage is always fixed and easy to evaluate. You will also pay only for the space you use.

Object storage is a data management technique that considers **storage data as distinct units** that are called **objects**. These objects are kept in a single storehouse as opposed to being ingrained in files inside different folders. To make up a file, object storage combines the pieces of data stored in the storehouse, by adding all corresponding metadata, and attaches a custom identifier.

Moving away from the **on-premise storage that is nearly always unused** although you have **already paid for it**, can make a huge difference in cost management. You can obtain as little or as much capacity as you need and **only pay for the amount you used**.

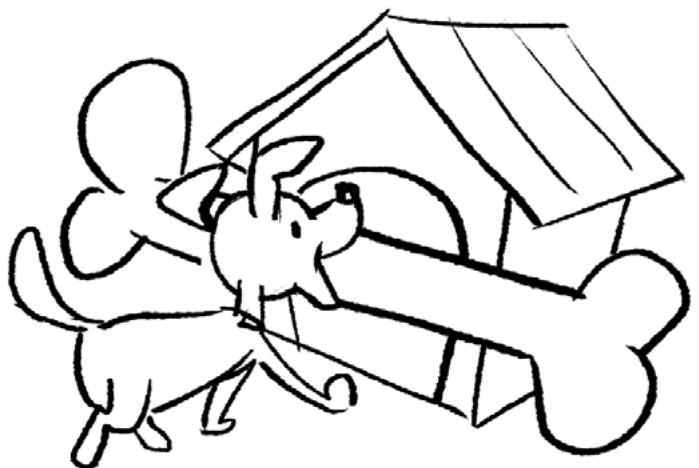
## Object Storage Integration – Scenario

### Example 1

Imagine you're a service provider that needs to store your customers' data. You have to estimate how much local storage you need. Then, you'll buy them and, of course, pay in advance.

The issues with this situation are two.

The first is that you can't be sure of how many customers you can get. So, **you may have underestimated the amount of space** you need and you can't solve this in real-time. You should look for additional servers, buy them and wait to have them delivered or made accessible to you for using. In this time, the further clients may decide to change provider.



Secondly, if **you don't need a certain amount of storage anymore** (let's say that a customer decreased their amount of data), you'll find yourself with abandoned and unused servers.

This kind of examples work also with big online events that take place once a year, or once and no more. Companies need many more servers to process huge amount of data, but once the event is over, they don't need those servers anymore.

## Example 2

Imagine you need to buy storage for a company with 1000 employees. You decide to provide each user 10 GB of storage.

First of all it sums up to 10 TB which is a lot of space that you need to pay for, therefore you go with the second approach which is purchasing only 5 GB for each user, but after a while you will recognize that it is not enough and force to buy new storage which means you have to again evaluate the amount of storage you need. Unless you have a clear vision about the amount of the storage you need, you will never find the sweet spot.

Alternatively, you can consider object storage that not only **eliminates the hidden costs of on-premise storage maintenance**, it also **charge you on the exact amount of storage you have used** which is the true sweet spot you were looking for.

To summarize, you should remember that the **total cost of ownership (TCO)** consists of both capital expense (**CAPEX**) including design and implementation costs as well as operating expense (**OPEX**) for the day-to-day functioning, maintenance, and electricity. By migrating to the object storage there is a significant **reduction of the TCO at least by 30% based** on 3 year period, and becomes greater through time.

**Savings in 3 years = onprem Storage TCO × reduction ratio**

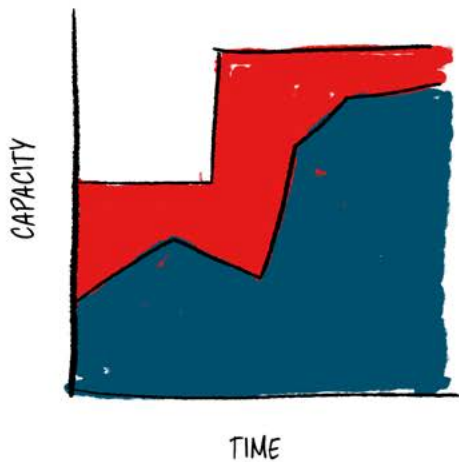
**Savings delivered by Object Storage Integration**

= ~ 3,000 \$/yearTB × 3 years × 0.3

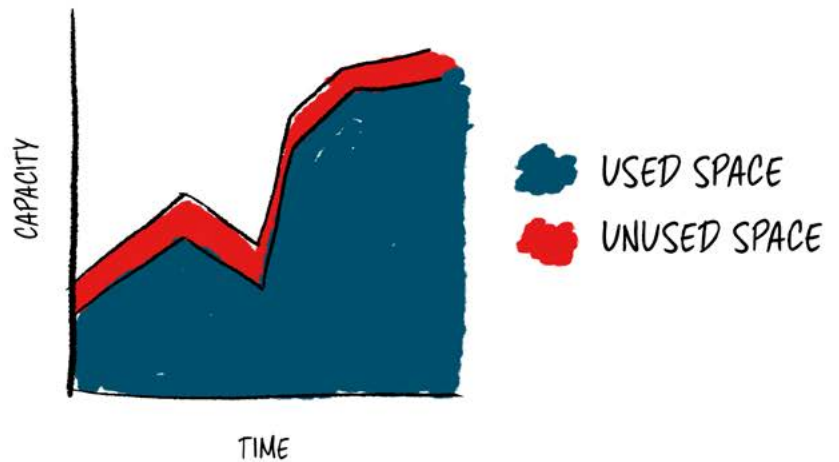
= 2,700 \$/TB per 3 years



TRADITIONAL PURCHASE



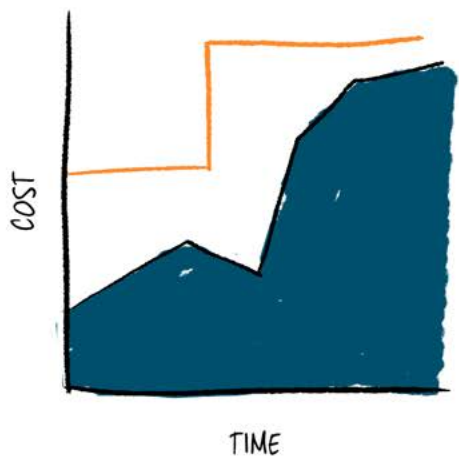
PAY AS YOU USE



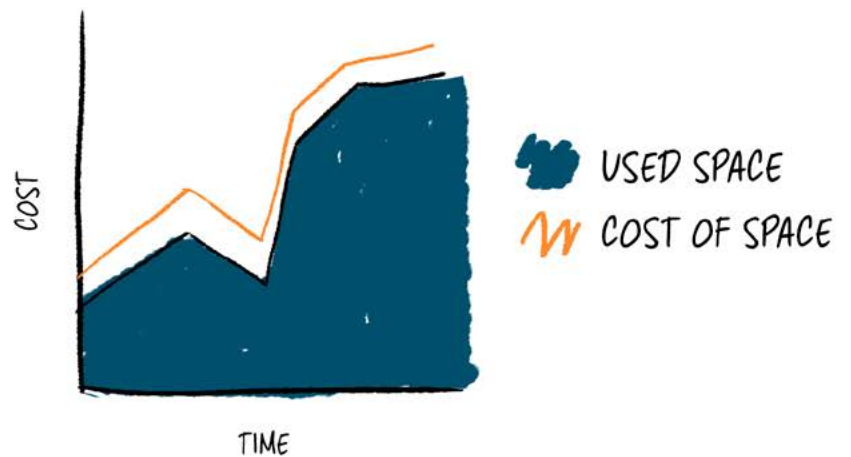
The problem with the traditional purchase is that the cost is a function of purchased space, not the used space, therefore, you have to pay for the unused space as well.

With the new strategy, you only pay for the space you use.

TRADITIONAL PURCHASE



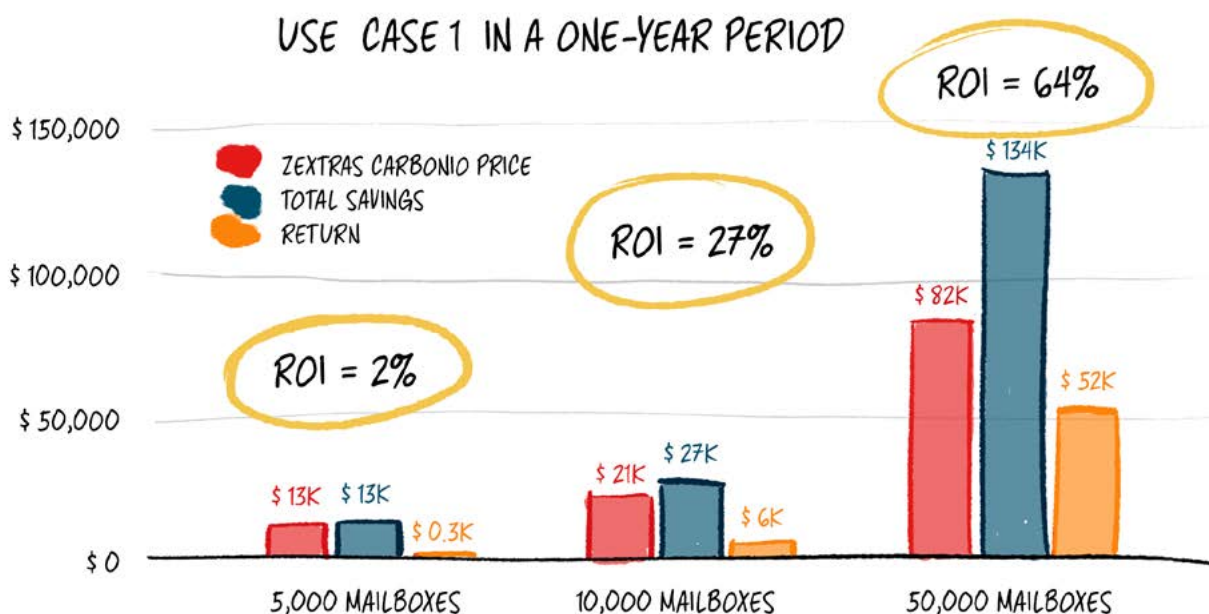
PAY AS YOU USE



# Practical Cases

## Use Case 1

With Zextras Carbonio you can migrate your data to two local storage with different access times in order to implement an HSM strategy. In addition to that you will have the benefits of deduplication and compression. Each of these features saves you some expenses. Let's try to estimate how much you will save each year with different number of mailboxes:



### Assumptions:

- Size of each mailbox equals 10 GB
- The price of 1 TB of faster and more expensive storage is \$200 <sup>1,2</sup>
- The price of 1 TB of slower and more affordable storage is \$19 <sup>3</sup>
- The deduplication space saving is 10% <sup>4</sup>
- The compression space saving is 35% <sup>5</sup>
- The primary tier contains e-mails of the past 15 days on the faster storage
- Average data transfer per user in a single day is roughly 10 MB.

<sup>1</sup> [Trendforce, 2021 - 4Q report](#)

<sup>2</sup> [Forbes report 2021](#)

<sup>3</sup> [Blocks & Files report, 2021](#)

<sup>4</sup> The ratio is roughly 1.11:1

<sup>5</sup> The ratio is roughly 1.54:1

Number of mailboxes	5,000
<b>Investment</b> (yearly cost of Zextras Carbonio license with block storage)	\$ 13,096
<b>Savings by Deduplication</b> = Cost of Storage × Space Saving = $5,000_{(\text{Mailbox})} \times 0.01_{(\text{TB/Mailbox})} \times 200_{(\$/\text{TB})} \times 0.1$	= \$ 1,000
<b>Savings by Compression</b> = Cost of Storage × Space Saving = $5,000_{(\text{Mailbox})} \times 0.01_{(\text{TB/Mailbox})} \times 200_{(\$/\text{TB})} \times 0.35$	= \$ 3,500
<b>Savings by HSM</b> (using more affordable storage as tier 2) = Data on Slow Storage × Cost Difference between Storages = $(5,000_{(\text{Mailbox})} \times 0.01_{(\text{TB/Mailbox})} - 5,000_{(\text{Mailbox})} \times 0.00001_{(\text{TB/Mailbox})} \times 15_{(\text{Day})}) \times (200_{(\$)} - 19_{(\$)})$	= \$ 8,914.25
<b>Total Savings</b> = 1,000 + 3,500 + 8,914.25	= \$ 13,414.25
<b>Return:</b> Total Savings – Investment = 13,414.25 – 13,096	= \$ 318.25
<b>ROI</b> = Return / Investment × 100 = 318.25 / 13,096 × 100	= 2%

Number of mailboxes	10,000
<b>Investment</b> (yearly cost of Zextras Carbonio license with block storage)	\$ 21,175
<b>Savings by Deduplication</b> = Cost of Storage × Space Saving = $10,000_{(\text{Mailbox})} \times 0.01_{(\text{TB/Mailbox})} \times 200_{(\$/\text{TB})} \times 0.1$	= \$ 2,000
<b>Savings by Compression</b> = Cost of Storage × Space Saving = $10,000_{(\text{Mailbox})} \times 0.01_{(\text{TB/Mailbox})} \times 200_{(\$/\text{TB})} \times 0.35$	= \$ 7,000
<b>Savings by HSM</b> (using more affordable storage as tier 2) = Data on Slow Storage × Cost Difference between Storages = $(10,000_{(\text{Mailbox})} \times 0.01_{(\text{TB/Mailbox})} - 1,000_{(\text{Mailbox})} \times 0.00001_{(\text{TB/Mailbox})} \times 15_{(\text{Day})}) \times (200_{(\$)} - 19_{(\$)})$	= \$ 17,828.5
<b>Total Savings</b> = 2,000 + 7,000 + 17,828.5	= \$ 26,828.5
<b>Return:</b> Total Savings – Investment = 26,828.5 – 21,175	= \$ 5,653.50
<b>ROI</b> = Return / Investment × 100 = 5,653.50 / 21,175 × 100	= 27%

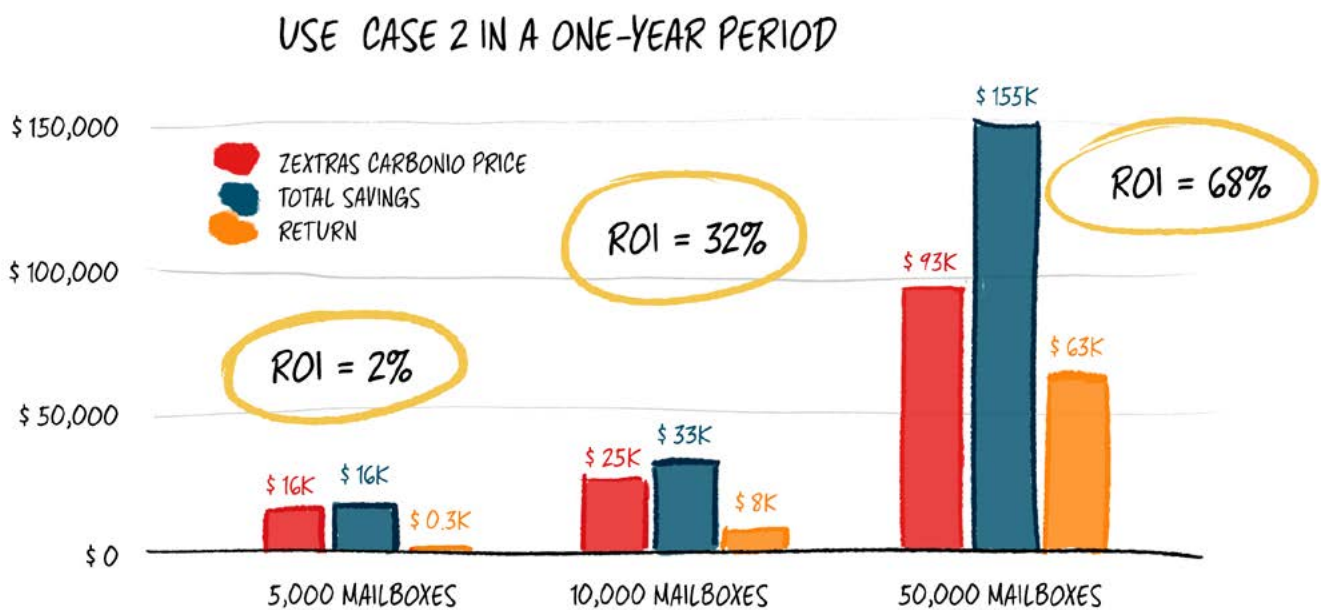
Number of mailboxes	50,000
<b>Investment</b> (yearly cost of Zextras Carbonio license with block storage)	= \$ 81,748.00
<b>Savings by Deduplication</b> = Cost of Storage × Space Saving = $50,000_{(\text{Mailbox})} \times 0.01_{(\text{TB/Mailbox})} \times 200_{(\$/\text{TB})} \times 0.1$	= \$ 10,000
<b>Savings by Compression</b> = Cost of Storage × Space Saving = $50,000_{(\text{Mailbox})} \times 0.01_{(\text{TB/Mailbox})} \times 200_{(\$/\text{TB})} \times 0.35$	= \$ 35,000
<b>Savings by HSM</b> (using more affordable storage as tier 2) = Data on Slow Storage × Cost Difference between Storages = $(50,000_{(\text{Mailbox})} \times 0.01_{(\text{TB/Mailbox})} - 10,000_{(\text{Mailbox})} \times 0.00001_{(\text{TB/Mailbox})} \times 15_{(\text{Day})}) \times (200_{(\$)} - 19_{(\$)})$	= \$ 89,142.5
<b>Total Savings</b> = 10,000 + 35,000 + 89,142.5	= \$ 134,142.5
<b>Return:</b> Total Savings – Investment = 83,425 – 81,748	= \$ 52,394.50
<b>ROI</b> = Return / Investment × 100 = 16,494.55 / 81,748 × 100	= 64%

## Use Case 2

With Zextras Carbonio you can migrate your data to two storage. In order to implement an **HSM strategy** the primary tier contains emails of recent 15 days on a local storage, and the secondary tier contains the rest on an AWS S3 Standard-Infrequent Access object storage.

In addition to that, you will have the benefits of **deduplication** and **compression** in the primary storage. Each of these features saves you some expenses.

Let's try to estimate how much you will save in three years period with different number of mailboxes:



### Assumptions:

- Size of each mailbox equals 10 GB
- The price of 1 TB of local storage is \$200 <sup>1,2,3</sup>
- The price of 1 TB of object storage is \$49 <sup>4</sup>
- The deduplication space saving is 10% <sup>5</sup>
- The compression space saving is 35% <sup>6</sup>
- The primary tier contains e-mails of the past 15 days on the faster storage

<sup>1</sup> [Trendforce, 2021 - 4Q report](#)

<sup>2</sup> [Forbes report 2021](#)

<sup>3</sup> [Blocks & Files report, 2021](#)

<sup>4</sup> [AWS S3 Intelligent - Tiering - Archive Instant Access](#)

<sup>5</sup> The ratio is roughly 1.11:1

<sup>6</sup> The ratio is roughly 1.54:1

Number of mailboxes	5,000
<b>Investment</b> (yearly cost of Zextras Carbonio license with block storage)	\$ 15,915
<b>Savings by Deduplication</b> = Cost of Storage × Space Saving = $5,000_{(\text{Mailbox})} \times 0.01_{(\text{TB/Mailbox})} \times 200_{(\$/\text{TB})} \times 0.1$	= \$ 1,300
<b>Savings by Compression</b> = Cost of Storage × Space Saving = $5,000_{(\text{Mailbox})} \times 0.01_{(\text{TB/Mailbox})} \times 200_{(\$/\text{TB})} \times 0.35$	= \$ 4,550
<b>Savings by HSM</b> (using more affordable storage as tier 2) = Data on Slow Storage × Cost Difference between Storages = $(5,000_{(\text{Mailbox})} \times 0.01_{(\text{TB/Mailbox})} - 5,000_{(\text{Mailbox})} \times 0.00001_{(\text{TB/Mailbox})} \times 15_{(\text{Day})}) \times (200_{(\$)} - 49.15_{(\$)})$	= \$ 10,384
<b>Total Savings</b> = 1,300 + 4,550 + 10,384	= \$ 16,234
<b>Return:</b> Total Savings – Investment = 16,234 – 15,915	= \$ 319.26
<b>ROI</b> = Return / Investment × 100 = 319.26 / 15,915 × 100	= <b>2%</b>

Number of mailboxes	10,000
<b>Investment</b> (yearly cost of Zextras Carbonio license with block storage)	\$ 24,511
<b>Savings by Deduplication</b> = Cost of Storage × Space Saving = $10,000_{(\text{Mailbox})} \times 0.01_{(\text{TB/Mailbox})} \times 200_{(\$/\text{TB})} \times 0.1$	= \$ 2,600
<b>Savings by Compression</b> = Cost of Storage × Space Saving = $10,000_{(\text{Mailbox})} \times 0.01_{(\text{TB/Mailbox})} \times 200_{(\$/\text{TB})} \times 0.35$	= \$ 9,100
<b>Savings by HSM</b> (using more affordable storage as tier 2) = Data on Slow Storage × Cost Difference between Storages = $(10,000_{(\text{Mailbox})} \times 0.01_{(\text{TB/Mailbox})} - 10,000_{(\text{Mailbox})} \times 0.00001_{(\text{TB/Mailbox})} \times 15_{(\text{Day})}) \times (200_{(\$)} - 49.15_{(\$)})$	= \$ 20,769
<b>Total Savings</b> = 3,250 + 1,1375 + 24,625	= \$ 32,469
<b>Return:</b> Total Savings – Investment = 32,469 – 24,511	= \$ 7,957.53
<b>ROI</b> = Return / Investment × 100 = 7,957.53 / 24,511 × 100	= <b>32%</b>

Number of mailboxes	50,000
<b>Investment</b> (yearly cost of Zextras Carbonio license with block storage)	= \$ 92,535
<b>Savings by Deduplication</b> = Cost of Storage × Space Saving = $50,000_{(\text{Mailbox})} \times 0.01_{(\text{TB/Mailbox})} \times 200_{(\$/\text{TB})} \times 0.1$	= \$ 12,500
<b>Savings by Compression</b> = Cost of Storage × Space Saving = $50,000_{(\text{Mailbox})} \times 0.01_{(\text{TB/Mailbox})} \times 200_{(\$/\text{TB})} \times 0.35$	= \$ 43,750
<b>Savings by HSM</b> (using more affordable storage as tier 2) = Data on Slow Storage × Cost Difference between Storages = $(50,000_{(\text{Mailbox})} \times 0.01_{(\text{TB/Mailbox})} - 50,000_{(\text{Mailbox})} \times 0.00001_{(\text{TB/Mailbox})} \times 15_{(\text{Day})}) \times (200_{(\$)} - 49.15_{(\$)})$	= \$ 98,918
<b>Total Savings</b> = 6,500 + 22,750 + 49,250	= \$ 155,168
<b>Return:</b> Total Savings – Investment = 155,168 – 92,535	= \$ 62,632.64
<b>ROI</b> = Return / Investment × 100 = 62,632.64 / 92,535 × 100	= <b>68%</b>

# Conclusion

In these pages, we proved how a single part of our software - the storage management one - **makes your organization save even before starting using the full product!**

In some scenarios, the **cost of Zextras Carbonio** is even **smaller than the money you save** using its storage management system. Moreover, the platform includes many more features to enhance your digital workplace. Check them here: [zextras.com/carbonio](https://zextras.com/carbonio)

Nowadays, it is increasingly essential to measure all your team's expenses and extract a tangible value from every software you purchase for your company. If you can prove this value before buying the product, you're already halfway there! So it's your turn. Ready to start saving?

# ZEXTRAS<sup>®</sup>

**If you need more information,  
or want to book a demo  
of Zextras Carbonio**

**CONTACT US!**

