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The Definitive Guide To Calculating The Cost of Backup

"Discovering the true cost of backing up business data on-premise and in the Cloud"

It's fair to say, the data storage marketplace has changed drastically in the last few years. Solutions such as tape-based backups for individual servers or centralised storage backup whereby data is replicated from disk to disk with a final copy to tape, are rapidly becoming resigned to the history books. In part this is because Cloud-based backups have become more popular due to their improved accessibility and cost effectiveness, even though Cloud products still require the IT department to 'let go' of their emotional attachment to their inhouse solution which they can

"A 2016 survey revealed that 46% surveyed use the Cloud for Data Recovery services, and 38% for Additionally, 29% of businesses Lower total cost of ownership objective driving their adopt

Source: Cloud Industry Forum – UK Cloud adoption snapshot & trends for 2016

No need to fear...

With IT's reluctance to relinquish control of the solution, it creates a confusing landscape for companies considering their backup options as emotion typically drives the end solution used – i.e. the option chosen is most often the least feared.

Backup as a Service (BaaS) represents an intangible "out there somewhere" option which means that companies need to not only trust in the technology but more importantly in the partner providing the service. In addition, traditional Backup solutions don't separate the data sets and typically provide a one size fits all solution, which is easy to understand regardless of your role within an organisation. However, when translated in to BaaS this approach can be expensive. Therefore, companies should re-address their requirements and specifically focus on the unseen costs they incur with their current solution, to understand the true value of BaaS.

Weighing up the true costs

Dissecting the most commonly used backup solutions, we can start to identify any hidden costs. With this, it is possible to understand the true overall cost of any given solution, which when considered alongside the usefulness of said solution, allows any company to make a genuine value judgement.

1. On-Premise

Typically, this will be a tape based solution with some sort of disk staging to provide rapid recovery. A likely scenario is something like Storage snapshots or VMware Snapshots for rapid recovery and then a tape solution for off-host / offsite storage of the data.

Understandably, this type of solution sounds relatively cost effective, as you already own the equipment, which was justified when the Infrastructure was first deployed. However, the operation of the solution can actually be expensive and there are many maintenance costs associated with the Hardware and Software involved, that individually don't seem like much but can add up.

To reveal the true cost of an on-premise solution the following elements & their associated costs should be considered:

People:

- **Professional Services / Consultancy** – consultancy to implement, fine tune and upgrade the existing backup solution.
- **Project Management** – structured management of any works to ensure they complete on time and within budget to the agreed specifications.

- **Application/Server Resource** –resources required to ensure that the applications talk to the Backup solution correctly and therefore are actually being backed up.
- **Network Resource** – resources that manage the network to ensure that the data can be backed up within the available window.
- **Storage Resource** – resources that maintain the schedule of snapshots and ensure that there is enough capacity and availability of the Storage to cope with the backups.
- **Backup Management** – resource to confirm that the backups have completed, the systems are up to date and the data is recoverable.
- **Restore Management** – resource tasked with testing and recovering the data to prove the solution works (Note: it is uncommon for businesses to actually do this but best practice states you should).
- **Service Delivery Management** – resource tasked with reporting throughout the layers of management that the services are operating as expected or working on a plan to get them there.

Hardware:

- **Facilities (Power / Cooling)** – Power, cooling and electricity to operate the Storage, Network, Backup devices and any ancillary costs regarding access control.
- **Facilities (Ground Rent)** – small but important to note that all of the equipment takes up space which has a cost. This may be meaningless if the business owns the land and the space can't be reutilised for a revenue generating purpose.
- **Tapes** – replacement tapes and additional tapes as the data set gets bigger and the retention period becomes longer.
- **Network** – WAN and LAN Network costs to transfer the data to a secondary Infrastructure stack at a different location.
- **Maintenance** – the external cost of software and hardware maintenance for the storage platform

Software:

- **Backup Software** – the upfront cost to purchase the software as well as maintenance and subscriptions to keep the software up to date. Additional 'node' licences as new applications are brought on or additional capacity may be required throughout the life of the solution.

Storage:

- **Tapes** – long term offsite storage of tapes or the rotation of tapes managed by a third party.

Note: Not all of the above will apply to every business but each should be considered to understand the total cost.

2. Public and Private Cloud

When it comes to Cloud solutions, both Public & Private, there is typically a shorter list of elements necessary to consider when calculating the true cost of the solution. This is simply because there are less resources, in particular internal, necessary to fulfil the service.

It is nonetheless, still important to consider what impact each element has on the overall cost of the solution to a business. As such, the following areas should be considered:

People:

- **Professional Services / Consultancy** – consultancy to implement, fine tune and upgrade the solution.
- **Project Management** – structured management of any works to ensure they complete on time and within budget to the agreed specifications.
- **Application/Server Resource** – resources required to ensure that the applications talk to the Backup solution correctly and therefore are actually being backed up.
- **Network Resource** – resources that manage the network to ensure that the data can be backed up within the available window.
- **Service Delivery Management** – resource tasked with reporting throughout the layers of management that the services are operating as expected or working on a plan to get them there.

Hardware:

- **Network** – WAN and LAN Network costs to transfer the data to the Cloud based service

Consumption:

- **Data** – typically cloud based solutions charge per GB of storage consumed or per GB of data transferred. This means that a business needs to be mindful when considering the amount of time it needs the data retained for and which parts of its data it actually needs backed up.

Note: Not all of the above will apply to every business but each should be considered to understand the total cost.

"Clouding" the picture

The real problem for most businesses is that a lot of the on-premise costs aren't immediately clear as they are absorbed into the operating costs of IT in general and unless the business can find a way of reutilising the resources there might be no perceived benefit in freeing them up. In addition, there are a lot of activities that should be performed regularly and in practice are not, for the fact that Backup is often not regarded as a primary concern – i.e. IT departments are drawn to the issues that are affecting current service and will come back to backups when there is a quiet time. As such, this is one of the major contributing factors that influences why so many on-premise backup jobs fail (77% of businesses that have actually tested their tape backup solution, have found a failure – highlighting the scope of the problem with said solution), even though most business leaders are oblivious to the situation.

Comparing the options

To get a clear picture of how each data storage option stacks up, below is a basic cost guide indicating the comparative scale of cost in each area over 5 years when backing up 5TB of data.

Type	Detail	On-premise	Public Cloud	Private Cloud
People	Professional Services / Consultancy	£	£	£
People	Project Management	£	£	£
People	Application/Server Resource	£	£	£
People	Network Resource	£	£	£
People	SAN Resource	£	N/A	N/A
People	Backup Management	££	N/A	N/A
People	Restore Management	£	£	£
People	Application/Server Resource	£	N/A	N/A
People	Network Resource	£	N/A	N/A
People	SAN / Backup Resource	££££	N/A	N/A
People	Service Delivery Management	£	££	£
Hardware	Facilities (Power / Cooling)	£	N/A	N/A
Hardware	Facilities (Ground Rent)	£	N/A	N/A
Hardware	Tapes	£	N/A	N/A
Hardware	LAN/WAN Network	£££	£££	£££
Hardware	Hardware Maintenance	£££	N/A	N/A

Type	Detail	On-premise	Public Cloud	Private Cloud
Software	Backup Software	££	N/A	N/A
Software	Software maintenance	£££££	N/A	N/A
Tape Storage	Offsite Tape Storage Provider	£	N/A	N/A
Consumption	Per GB Storage or transfer rates	N/A	££	£££££
Total Cost (estimate)	5TB of data over 5 years	£370,000	£73,800	£188,000

Note: A Private Cloud solution may cost more than a Public Cloud option over the course of 5 years, however there are significant benefits that can be realised on a Private solution which aren't available on Public. Please visit our BaaS page or get in touch and we would be happy to explain in further detail.

A costly conclusion?

A major benefit of Cloud based BaaS is that the business avoids the responsibility of ensuring the service is fully operational at all times, as it will be covered in the terms & conditions as well as the Service Level Agreements in place with the service provider – removing one major headache as well as considerable expense if handled internally. In addition, as with any outsourcing, the business has the ability to affect change, as the service provider is bound by the contract to ensure the services are fit for purpose.

In conclusion, each backup solution suits different types of users and businesses. For instance, if the business can ensure that it only backs up the data it actually needs to, the costs of using a Cloud solution can be controlled and in reality should be less than an on-premise solution. If, on the other hand, this granularity of data storage cannot be achieved, it may mean that the most cost effective option remains an on-premise solution.

The main point to note, is that with this guide, every business should now be able to make a decision based on facts rather than emotions and be able to find a suitable Backup solution that is right for their particular requirements.

To find out more and discover what solution best suits your specific server workload requirements, use our interactive guide – Where should I put my server workloads?

We're always available to discuss any IT Project and would welcome the opportunity to talk it through. Get in touch now and we're confident we will find the perfect solution for your business.
Get in touch today.

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