CLOUD-BASED BACKUP AND VIRTUALIZATION: BEGINNING THE MOVE TO HYBRID CLOUD
In this report, we’ll analyze the many challenges that organizations face when it comes to migrating to a hybrid and cloud-native infrastructure. And we’ll look at how leading businesses are modernizing their capabilities by adopting cloud-based backup systems to increase reliability and expedite their migration to a hybrid data platform.

Some of the earliest business technologies were solutions for backing up data and systems. As soon as the first company started creating vital data, they needed a way to protect and store that data.

While a variety of technologies have made backup faster, more secure, and easier to access, no technologies have had a bigger impact than the cloud and virtualization. By making it possible to do unlimited backup outside of data centers and on-premises storage infrastructures, cloud-based backup has given businesses the confidence that they can recover from disasters, natural or man-made.

The rise of virtual machines has made enterprise servers and applications more portable and resilient than ever before. And when it comes to the cloud, virtual machines and backup, the partnership is a full one.

For many businesses, backup technologies were often the first to leverage the cloud, and Aberdeen research shows that it is now one of the first elements of hybrid cloud within many organizations. When tied to virtual machines and software defined approaches, cloud-based backup gives businesses an unprecedented ability to keep their systems protected and their business up and running.

In this report we will look at how cloud has revolutionized the capabilities of backup, how it enables businesses to better take advantage of virtual machines and other new technologies such as containers, IoT, and software-defined data centers, and how organizations can leverage advances in cloud backup to improve their virtual machine and business reliability and performance.
The Increasing Need for Effective Backup in the Modern, Virtual, Hybrid Environment

At many organizations, where their data and backups reside is often based on a number of different factors. For example, the age of the company infrastructure, the amount and type of data and systems, the number of virtual servers and systems, and the overall use of cloud within the business.

And then there’s the way in which the business has been doing backup. Are they using tape, some cloud-based backup, or a combination of these or other backup technologies?

Whatever way an organization is doing backup, there should be one clear goal in mind. Organizations that effectively deploy backup understand that the end goal isn’t to backup and save data, systems, and VMs; the real goal is to reduce downtime to the smallest amount possible (zero would be nice) and achieve high availability, security, and reliability for the key applications and systems that their business relies on.

In our research into backup and disaster recovery, we asked respondents about the pressures driving their business to modernize and migrate more of their capabilities to the cloud, as shown in Figure 1.

Figure 1: Top Pressures to Modernize Your Infrastructure

<table>
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<tr>
<th>Percentage</th>
<th>Category</th>
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<tbody>
<tr>
<td>63%</td>
<td>Meet the increasing needs for storage capacity</td>
</tr>
<tr>
<td>52%</td>
<td>Need for DR or backup solution</td>
</tr>
<tr>
<td>44%</td>
<td>Need to support additional users or services</td>
</tr>
<tr>
<td>32%</td>
<td>Manage escalating storage complexity</td>
</tr>
<tr>
<td>31%</td>
<td>Manage escalating storage costs</td>
</tr>
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Source: Aberdeen, October 2018
age of respondents, n=124
Looking at this data, we see that the number-one driver is the need to increase capacity, which makes sense given how the amount of data and server requirements continues to grow annually for nearly every business. Interestingly, the number-two driver is the need to improve disaster recovery and backup capabilities.

This is no surprise, given how today’s businesses are digitally transforming and migrating to a hybrid IT model embracing on-premises and cloud. Organizations are finding that reliance on out-of-date backup systems that aren’t yet cloud-ready is reducing performance, increasing the risk of data loss and downtime, and keeping these businesses from adopting other key new technologies.

Rounding out the top pressures in our research are the need to support increasing amounts (and diversity) of users and services, while dealing with escalating complexity and costs.

Throughout our research into IT issues, Aberdeen has seen how businesses today are finding that increasing costs and complexity are becoming barriers in the way of digital transformation and the move to hybrid IT. And these organizations are looking for solutions that reduce these hurdles while easing their migration to these vital new technologies.

**How Modernization and New Technologies Require New Methods of Backup and Recovery**

Running IT for a modern organization means constantly moving forward. Any business that thinks they can stick to older and out-of-date technologies is setting themselves up to not only fall behind competitors, but also to face greater security risks and downtime.

Aberdeen research has found that leading IT organizations are constantly adopting new technologies and working to modernize their infrastructure.

And these leaders aren’t implementing these technologies because they are “cool,” or just to have the latest and greatest. They do so to be more agile and flexible, meet rising user and customer demands, and reduce costs while boosting profitability.

New technologies often help businesses leverage other emerging technologies. An excellent example of this is how object-based storage, with its excellent scalability and performance, has made the move to cloud-based backup more attractive.

**According to Aberdeen research, the top two benefits of leveraging the cloud are reduced IT costs and increased security.**
To find out what key trends are driving modernization in the data center, we asked businesses to list the top new technologies that they are deploying to improve their infrastructure capabilities. In Figure 2 below, we list the top six technologies that businesses are turning to today.

**Figure 2: Top New Technologies Driving Infrastructure Modernization**

<table>
<thead>
<tr>
<th>Technology</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Internet of Things</td>
<td>30%</td>
</tr>
<tr>
<td>Hybrid cloud</td>
<td>27%</td>
</tr>
<tr>
<td>Software Defined Networking (SDN)</td>
<td>24%</td>
</tr>
<tr>
<td>Containers</td>
<td>21%</td>
</tr>
<tr>
<td>Software Defined Data Center</td>
<td>20%</td>
</tr>
<tr>
<td>Hyper-converged Infrastructure</td>
<td>14%</td>
</tr>
</tbody>
</table>

Looking at this list, we see that the number-one new technology is the Internet of Things, which is pushing many businesses to increase their data storage and backup capabilities due to the massive amount of data that these devices create. But more interesting is the rest of the top new technologies, as they all deal with the increasing virtualization of data centers and the move to hybrid, intelligent, and cloud-native platforms.

With hybrid cloud, organizations are working to get the most out of both their on-premises and cloud-based systems, while software-defined technologies are bringing increased programmability and intelligence to how networks, data centers, and applications connect, and containers are enabling fluid and agile applications and functionality that can run anywhere and at any time.

Adoption of these new technologies is key to how many businesses are modernizing and succeeding in today’s environments. And increasingly,
we are finding that businesses can’t successfully transform if they are relying on back-end technologies — like backup — that aren’t designed to work with hybrid, cloud-native, and virtual platforms.

**Building a Hybrid-ready Backup Platform Designed for the cloud and Virtual Machines**

Some businesses might look at their current backup capabilities and think, “If it ain’t broke, why fix it?” But if they take a deeper look at their existing backup, they will probably find that it is in many ways broken. It probably can’t handle the capacity needs of modern businesses, it has limited ability to back up modern virtual systems, and if it has any cloud capabilities at all, they are most likely limited in focus and are basically glued onto an older solution.

These out-of-date backup capabilities limit these organizations in many ways. They lead to poor reliability, low security, difficult restores during emergencies, and increased costs and resource demands.

However, when businesses leverage modern, cloud-native backup systems, they not only overcome the limitations of older backup, they make it easier for organizations to improve all of their backup, disaster recovery, and data management systems, as shown in Figure 3.

**Figure 3: cloud-based Backup Boosts All Backup Capabilities**

![Bar chart showing the percentage increase in backup capabilities with cloud-based backup.](chart)
When organizations are effectively utilizing cloud-based backup, they are also 40% more likely to see upgrades in all of their backup performance and connectivity, and more than twice as likely to upgrade all of their backup technologies and systems. Businesses with cloud-based backup are also more likely to have increased capabilities when it comes to backing up virtual systems, and are 60% more likely to have implemented software-defined technologies.

This is a key element of IT modernization and transformation. New technologies and upgraded capabilities don’t exist in a vacuum. When leading businesses take a key step, such as upgrading to a cloud-native backup solution with strong capabilities to manage virtual and hybrid systems, this has a chain effect on their ability to carry out other improvements in their infrastructure.

But there are also tangible benefits to the bottom line. And when organizations leverage cloud-based backup, they overcome challenges and see significant gains, as shown in Table 1.

**Table 1: cloud-based Backup Delivers Key Benefits**

Business with cloud-based backup are:

<table>
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<th>Percentage</th>
<th>Benefit</th>
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<tr>
<td>75%</td>
<td>more likely to have higher end-user satisfaction</td>
</tr>
<tr>
<td>40%</td>
<td>more likely to see less outages and downtime</td>
</tr>
<tr>
<td>35%</td>
<td>more likely to have higher infrastructure management satisfaction</td>
</tr>
<tr>
<td>30%</td>
<td>more likely to see improved application control and agility</td>
</tr>
<tr>
<td>25%</td>
<td>more likely to see reductions in CapEx spending</td>
</tr>
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</table>
With cloud-native and flexible backup in place, leading organizations are able to deliver the reliable and secure services that the business and end users require, which leads to them having much higher user satisfaction than their competitors. The ease of use and increased capabilities of these modern backup systems also keep IT management happy (at a rate that is 35% higher than competitors).

Advanced cloud-based backup also leads to increased agility and reliability for the systems and applications being backed up. Looking at Table 1, we find that businesses with cloud-based backup are 40% more likely to have fewer outages and higher uptime, and 30% more likely to see increased application control and agility.

And cloud-based backup is also delivering on the bottom line for these leading businesses, as they are 25% more likely to have lower CapEx spending than their competitors.

**Recommended Steps**

Organizations that want to effectively modernize and achieve a successful digital transformation to hybrid cloud need to also take a hybrid approach that leverages cloud-based backup systems. And while we’ve shown the benefits that cloud-based backup brings, to successfully leverage this technology, organizations should consider some best practices.

To get to a strong hybrid cloud infrastructure with reliable cloud-based backup, businesses should:

- **Understand your cloud needs in order to become more agile.** Effectively implementing cloud-based backup involves more than just picking a public cloud provider and choosing backup software. Leaders in IT infrastructure understand the importance of figuring out what needs to be backed up to the cloud, what should be stored on-premises, and where a hybrid cloud approach will pay the highest dividends. And doing this right can lead to increased agility and performance, as was the case for a European transportation firm in our research that saw faster deployment of servers and applications after effectively deploying cloud-based backup.

- **Build a hybrid-ready backup infrastructure.** With a strong hybrid approach in place, leading organizations can take advantage of the strengths of the cloud and on-premises to get
the highest levels of reliability and speed. But achieving a hybrid cloud approach can be difficult if an organization’s backup systems are out-of-date, overwhelmed, and unable to integrate with modern technologies. For example, we saw that by deploying cloud-based backup that was hybrid-ready, a large North American manufacturer was able to reduce their overall IT costs and see faster backups and restoration of data.

**Get ready for tomorrow’s technologies.** Many of the key technologies businesses are turning to today expect and require other systems to be cloud-native and hybrid-ready. Businesses need to be ready for emerging technologies that are coming soon. With a reliable and flexible hybrid cloud-based backup infrastructure, businesses can reduce the complexity of these technologies and increase their ability to utilize them to gain competitive advantages.

Modernizing your backup systems isn’t simply about moving to the cloud. Leading businesses understand that hybrid cloud infrastructures are where IT is heading, and if backup isn’t part of that migration, then reliability and security will suffer.

Organizations can achieve their IT infrastructure goals by taking a modern, hybrid cloud-ready approach that gives them all of the performance and direct control capabilities of on-premises, integrated with the scalability and reliability of the cloud.

Which means that while backup may be one of the older enterprise technologies, when modernized effectively, it can be a key enabler of future technologies.
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