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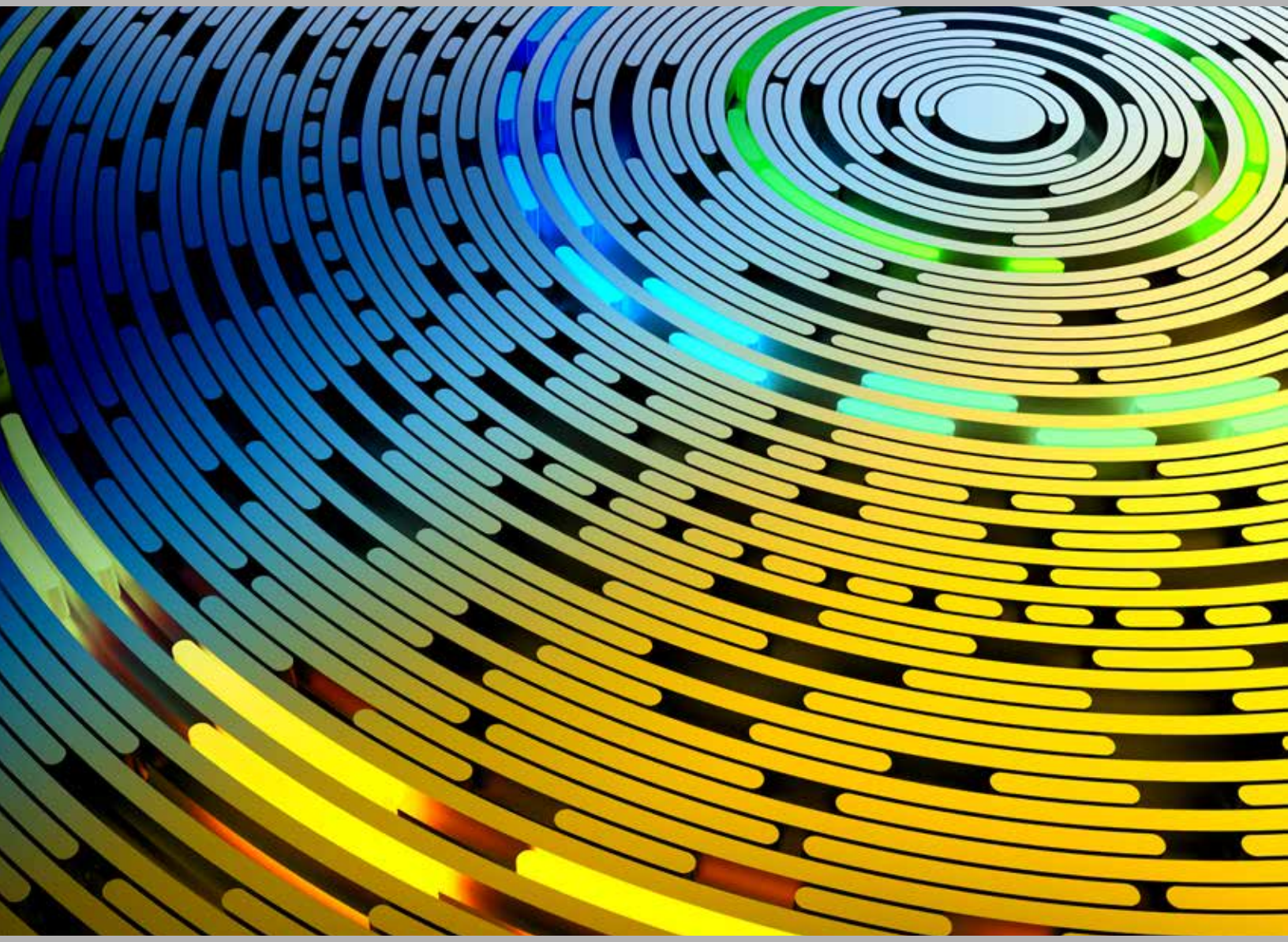

CLOUD BACKUP AND RECOVERY DEMYSTIFIED:

Understanding the Why, How, Where and When

INTRODUCTION:

Anyone who has lost even one computer document has experienced that sinking feeling after being told the file is irretrievable. Magnify that loss across an entire business enterprise and you can begin to understand that pain in terms of time and dollars lost to business interruption. Add to that the mounting threat of cybercrime, which has resulted in tougher data security regulations for certain industries.

According to a recent Global IT survey, more than $1.7 trillion per year is lost across the world due to data loss and downtime. Whether yours is a small to midsize business or a larger corporation, there has never been a greater need to have a strong, reliable backup and disaster recovery plan in place.

While most businesses recognize the need to back up their data, fewer understand how much of that data is recoverable should disaster strike. What are the benefits of cloud backup? How long does it take to get data back, and how much does it cost? What is the difference between backup, recovery, replication and disaster recovery as a service (DRaaS)?

As a provider of Veeam Cloud Connect through our Veeam Extreme solution, EDSI is providing this e-book, "Cloud Backup and Recovery Demystified: Understanding the Why, How, Where and When" to answer many of the questions businesses have about data backup and recovery. Our chapters include:

I. **3-2-1…Is My Cloud Backup Recoverable?**

II. **Backup, Replication and Recovery: What Are the Differences?**

III. **Which Data Recovery Solution is Right for Your Business?**

IV. **How Long Does it Take to Recover Data?**

V. **What Does Data Recovery Cost?**

CHAPTER 1: 3-2-1….IS MY CLOUD BACKUP RECOVERABLE?

Does your business have a backup plan for its backed-up files?

According to recent international research by Security Week, data loss at the enterprise level has increased more than 400 percent over the last two years, and the threat continues to climb. And when it comes to data breaches, IT Web predicts that the total cost will be more than $2.1 trillion by 2019.

Data Backup Options

Despite massive investments in data centers, businesses are grappling with exponential data growth; end users are losing data and are finding they can't access data when they need it. What's more, legacy backup systems have gaps and dependability issues. When you depend on internal hard disk drives or removable storage media, your business can become too vulnerable to corruption, malware, theft and loss. It is essential that businesses of all sizes establish clearly defined backup policies for data protection that can be followed by IT and business stakeholders.

The always-on businesses of today require that your data is available to you 24/7/365. You need to ensure data recoverability in the event of accidental data deletion, corrupted information or some kind of a system outage. Your business and those it serves must be assured that your data is protected to mitigate any costly down-time. To meet these demands, many businesses are modernizing their data centers with virtualization, storage and cloud technologies.

The 3-2-1 Approach

Cloud backup is great, but how do you know you will be able to recover your data? Just because your data is backed up to the cloud, it doesn't guarantee that your system is fully recoverable. When determining the best dependable and recoverable backup system, you should ask:

- How much will it cost?
- How long will it take?
- How does it work?
- What is the recovery process?
- How often have you tested your back-up system?
- Can someone document that it is backed up?
- Is it in a readable format?
- Do you know how to get the data back into your main system?

Veeam Extreme: The Cloud Connect Solution

EDSI recommends the 3-2-1 approach as a good place to start. You should plan to keep three copies of your data, stored on two types of media with one copy in a remote location. Yet, for many businesses, getting backups offsite can be challenging because of limited bandwidth, data volumes and lack of resources.

One solution is EDSI Veeam Extreme, an offsite solution that guarantees fully recoverable backups.

Veeam Cloud Connect doesn't require that your company invest heavily in a second site or additional bandwidth. This solution makes it easy for Veeam customers to extend their backup infrastructure to the cloud. Should a disaster occur, your backup is backed up through Cloud Connect. With Veeam Cloud Connect, there is no need to own the second site, so you avoid incurring the capital expenses it would take to build and maintain an additional center. For companies already utilizing Veeam backup services, this solution offers a simple solution to send data offsite easily and in a secure manner.

Recoverable Cloud Backup

Veeam delivers powerful and reliable features and functionality to help you avoid the risk of catastrophic loss. With Veeam Cloud Connect, you get:

- High-speed recovery
- Data loss avoidance
- Verified recoverability
- Leveraged data
- Complete visibility
- Seamless connection with Veeam user interfaces, workflows and data collection

Data backup and disaster recovery solutions should work together to protect your data and ensure business continuity in the event of an attack, natural disaster or other threat. To get started on the right plan for your company, it is important to understand what the different terms mean. In Chapter II, we define the following terms and explain how they fit in the overall data disaster recovery strategy:

- Data Backup
- Data Replication
- Data Recovery
- Disaster Recovery as a Service (DRaaS)

CHAPTER II: BACKUP, REPLICATION AND RECOVERY: WHAT ARE THE DIFFERENCES?

Data is one of your business' most valuable assets. And, like any asset, you want to make sure you're protecting it. Whether you're backing up your data to physical or virtual machines (VM)s, do you know whether that data is recoverable in the event of an emergency?

It helps to understand the differences among data backup, data replication and disaster recovery. These terms are often used interchangeably, which can lead to great confusion! Whether you are a business owner or IT director, it's important to know the differences so you are utilizing the right approach to minimize downtime and get your system back up and running should a disaster occur.

Data Backup

Backing up your data simply means you are making periodic copies of your files according to your organization's specific needs. The method can range from physical tapes to virtual tapes kept offsite. Typically, organizations prioritize the most important data to back up based on their value or industry compliance needs. Increasingly, businesses are relying on the cloud to manage an ever-increasing volume of data. However, data backup does not mean you have a disaster recovery plan in place.

Data Replication

With replication, you are copying and moving data to another location. The cost of replication depends on data volume, so the most company-critical applications, data and processes are replicated to get an organization running again following a disaster according to the business' recovery time objectives (RTO). Disaster recovery goes a long way in increasing the availability of modern data centers by creating off-site replicas of VMs. Replicating VMs, however, is just part of the full disaster recovery plan—both end users and service providers need a solution that has a complete set of features and capabilities that go beyond replication. In other words, data replication is an important component of disaster recovery, but it doesn't encompass the entire disaster recovery plan.

Disaster Recovery

A full disaster recovery plan relies on replication, but it also includes a more comprehensive plan. For example, health care compliance regulations require that a full business continuity plan is in place should a disaster occur. Think of disaster recovery as a strategy while replication is a process that is part of that strategy.

Through replication, disaster recovery solutions can reduce downtime from hours to minutes to meet strict RTOs and allow businesses to keep their critical applications running. A disaster recovery plan is a kind of insurance policy that guarantees the recovery of your data—think of it as mirroring your primary environment to a separate production environment that is capable of ensuring your business' continuity with all aspects of your current environment, including software, connectivity and security. Virtualization made replication services easily accessible, configurable and usable.

Disaster Recovery as a Service (DRaaS)

For a long time, business owners considered disaster recovery to be cost-prohibitive because it required major capital investments in hardware and software, as well as the need to build and maintain a secondary site. The good news is that things have changed. Given the flexibility of virtualization and the ease of cloud technologies, there is no longer a need for "DIY disaster recovery"—now, there is disaster recovery as a service (DRaaS), a perfect matchup between cloud-based technology and a solid disaster recovery solution.

How does DRaaS work? Put simply, by renting resources from a service provider such as EDSI on a pay-as-you-go basis model, end users have the security of knowing they can achieve the same final result as the traditional second site by having CPU, ram, storage and networking resources available for failover operations without prohibitive capital costs and the burden of managing the disaster recovery site. As a service provider, EDSI can help you keep costs down and increase efficiencies.

DRaaS Solutions Through Veeam Cloud Connect

EDSI makes DRaaS possible through Veeam Cloud Connect. Our Veeam Extreme solution eliminates the need for a second disaster recovery site because it makes it easy for businesses to extend their backup infrastructure to the cloud using DRaaS solutions.

If a disaster occurs, your backup is backed up through Cloud Connect. For companies already utilizing Veeam backup services, this solution offers a simple solution to send data offsite easily and in a secure manner with the best that DRaaS has to offer, including:

- Fast, flexible failover of specific VMs or an entire site
- Streamlined failback with zero data loss and minimal disruption to users
- Recovery assurance, including support for replica and failover testing and alternating production between sites
- Seamless integration with Veeam user interfaces, workflows and data collection

Now that you have a better understanding of how each of the terms fit in the overall data recovery strategy, how do you decide which data recovery solution is right for your business? In our next chapter, we provide five considerations that should help you assess your needs.

CHAPTER III: WHICH DATA RECOVERY SOLUTION IS RIGHT FOR YOUR BUSINESS?

As your business grows, the volume of data your company relies on to serve your customers grows along with it. You want to be sure you are backing up your data with reliable solutions that guarantee uninterrupted access to data in case of a disaster. For some highly regulated industries, such as health care and financial services, compliance regulations dictate that you have protected and recoverable data. So, where to begin?

1) Assess Your Needs

First, take a realistic look at your needs. What is your current volume of data, and what do you anticipate it being in the next 5-10 years? What are the systems you are using, and where are they hosted? How often does it need to be backed up, and which files are highest in priority should something go wrong? What kind of security does the data require? By fully assessing your environment, you'll be better equipped to determine which recovery option is right for you.

2) Backup is Not the Same as Recovery

Most people are familiar with traditional backup—if you are a smaller business, you may have a tape drive or attached storage in your server room where you are performing backup on a weekly basis. Now, imagine there is a fire at your primary site. Do you have a location where you can restore your backups? If the answer is no, or you are a larger company where backing up large data sets once a day would be a challenge, you will want to consider a cloud environment for a true disaster recovery solution.

3) Is Cloud Backup Sufficient for Recovery?

Cloud backup simply means that you are backing up your business data to an offsite network of servers, aka "the cloud," so that it is available for retrieval in the event of data loss. Cloud backup, which will allow you to restore your data back to physical servers, might be sufficient for you if you don't have a large amount of data. However, consider that where it might take just minutes to restore a single file, large amounts of data could take weeks. Do you have onsite expertise available to restore the file and databases to available onsite hardware? If the answer is no, you should think about cloud disaster recovery.

4) Disaster Recovery/DRaaS Solutions

The key difference with cloud backup and disaster recovery is that with backup, you are only talking about files and databases. If you don't also back up your applications, the "pieces" might be intact, but the application needed to run them has not been recovered.

Disaster recovery is that missing infrastructure that allows your business to fully recover from a disaster.

With DRaaS, you're able to recover both your data and your applications, so you're able to bring back online your entire IT infrastructure, or at least those files you have deemed most necessary to the operation of your business.

5) No One-Size-Fits-All Decision

How fast that recovery happens depends on your business' recovery time objectives (RTOs) and recovery point objectives (RPOs). Within DRaaS, you will need to weigh the benefits of various price points. For example, how much time (RTO) can your business go without for a specific application? On the other hand, RPO is the maximum time frame you have after a disaster before data is lost. In other words, how much data can be lost between the source and the target within that replication? There is a big price difference, for example, between whether you need instant duplication of your infrastructure versus allowing for a 10-minute window. A DRaaS professional can help you determine the best solution for your business.

DRaaS Solutions through Veeam® Cloud Connect

Veeam® enables DRaaS as part of a comprehensive availability strategy, embracing virtualization and storage investments in your data center and extending them through the hybrid cloud. With EDSI's Veeam Extreme solution, your entire IT infrastructure and files are backed up through Veeam Cloud Connect should disaster occur. For companies already utilizing Veeam backup services, this solution offers a simple solution to send data offsite easily and in a secure manner with the best that DRaaS has to offer.

In this chapter, we have introduced RTO and RPO. In our next chapter, we'll take a closer look at what factors affect the speed at which you can recover your data.

CHAPTER IV: HOW LONG DOES IT TAKE TO RECOVER DATA?

Your business depends on having immediate access to its data at a user's fingertips 24/7. Should a disaster occur, every business owner and IT director wants to know that their company's data can be recovered—and quickly. While smaller businesses schedule backups on a regular basis when users aren't accessing files, larger organizations need to have a disaster recovery plan in place that relies on cloud backup and replication to ensure these recoveries occur near-synchronously. Before discussing options like Veeam Cloud Connect, it is useful to understand what affects recovery timing.

RTO/ RPO

How long it takes depends on several factors, and two of the most important depend on your business' RTO and RPO).

RTO is the most important factor that answers the question, how much time does it take to recover after your business disruption? Your RTO is the amount of time that can pass and the service level to which an application must be restored after a disaster to avoid unacceptable consequences. An organization needs to determine how long it can afford to go without a specific application. For example, can you wait five days before you have access to your benefits system?

Since RPO is so closely tied to RTO, it's useful to weigh it into the data recovery question. RPO addresses the length of time between backups. Simply put, how much of your data can you afford to lose? For example, let's say your RPO is set for four hours. If your last backup was at 8 a.m., and your system failed before the next backup at noon, you would lose any new data that was entered between 8 a.m. and the time of the disruption. Every organization needs to determine the RPO that best meets the organization's recovery plan needs. If you have a database that has a high volume of transactions, you would want a low RPO so you could be assured that as much of the data as possible will be intact when your data is replicated in the target.

The Goldilocks Decision

Do you want it served hot, warm or cold? How fast you can retrieve lost data depends on the type of site you have.

- Hot: Having a hot replication site means it is always available; you are not even failing over between sites; it's more like when your data fails, the other site continues to work.
- Warm: A warm site has some advance configuration at the failover site, but it is not always running. So there is a longer RTO due to some failover transition.
- Cold: A cold site is not prepared at all—it could even be an empty space without equipment in it. For the sake of quick recovery, it's not a viable option.

Cost must be weighed against speed with any backup and replication system. For example, with a hot site, you are maintaining two environments on a daily basis—the source and the target.

Rapid Data Recovery Solution: Veeam Cloud Connect

VMware can be restored quickly and easily with Veeam Cloud Connect offered by EDSI Veeam Extreme. Veeam Cloud Connect provides a fully integrated, fast and secure way to back up, replicate and restore from the cloud. Cloud Connect meets disaster recovery time objectives (RTPO™ < 15 minutes) with fully recoverable backups. Affordable and efficient image-based replication delivers cloud-based disaster recovery for ALL applications.

Veeam delivers powerful and reliable features and functionality to help you avoid the risk of catastrophic loss.

In the final chapter of our e-book, we take a look at the various factors that affect the cost of data recovery.

CHAPTER V: THE COST OF DATA RECOVERY

Now that we have taken a look at the various ways to back up and recover data, and considered the issue of recovery timing, what are the other factors that influence the cost of retrieving your backed-up data? This is an important question, especially when many mass retailers offer customers pricing for backing up their data—but when it comes to actually recovering that backed-up data, it's an entirely different story that ends with a significant price tag.

In [a previous blog/Chapter IV]: "How Long Does it Take to Recover Data?" we touched on RTO and RPO, and these two factors, plus the volume of data, certainly influence the cost of getting operations up and running.

The Cost of Doing Nothing

Before examining recovery costs, it is important to first look at the business cost of losing data. Whether yours is a small business or a large corporation, having a disaster recovery plan has become increasingly essential.

At the same time, disaster recovery budgets have not kept up with the growing incidences of disaster, such as natural disaster and weather events, cybercrime or other business threats.

A late 2014 Veeam study estimated the cost of mission-critical application downtime at $130,000 per hour, while a Gartner Research report estimates that amount as high as $300,000 and up for larger companies. It certainly goes without saying that businesses – no matter what their size – can no longer afford to do nothing.

The Cost-Efficient Cloud

Cloud disaster recovery increasingly is looked at as a way to maximize data protection in an affordable manner. One of the great advantages of backing up to the cloud is that your data is protected offsite and it's accessible virtually from any location. You don't need to worry about relocating to another facility, paying for another facility or excessive employee time.

There is, however, a risk to using the cloud only to back up data. It can take weeks to recover data—and that doesn't even begin to cover the costs associated with replacing servers, networking and finding a disaster recovery site. With DRaaS, an organization can run instances of its applications in the provider's cloud, such as with Veeam Cloud Connect, offered by EDSI Veeam Extreme. DRaaS eliminates these needs while providing much faster recovery times.

EDSI + Veeam Cloud Connect – Disaster Recovery Solutions with No Cost Surprises

Veeam defines DRaaS by offering it as part of a comprehensive availability strategy, providing a consistent user experience and reducing overall cost to protect your data (backup + replication + cloud). Veeam Cloud Connect replication makes cloud-based DR efficient with no hidden costs.

Unlike other solutions, Veeam Cloud Connect will not only manage data replication for disaster recovery, but this comprehensive DRaaS solution will also manage the network connections between two sites, regardless of their physical location. This eliminates networking complexity, and the high cost and headaches associated with reconfiguring networks for disaster recovery testing or full or partial failover, by preserving the communication between running replica VMs.

Veeam Cloud Connect Replication is a fast, secure, cloud-based disaster recovery solution that brings Veeam's cloud technology to the next level. EDSI will work with customers on customizing a Veeam Cloud Connect solution with pricing that fits their data needs and RTPO terms. Through Veeam, we offer:

- Affordable and efficient, imaged-based replication for true disaster recovery — RPTO
- Simple, straightforward pricing
- Disaster recovery for any workload—Efficient, cost-effective, and storage, application and OS-agnostic
- Advanced networking capabilities—Veeam handles the networking for you without any complex setup or VPN, one of the biggest challenges of disaster recovery testing and failover

Conclusion

Do you know if your data is recoverable in the event of an emergency? You should have total confidence that your data will be available to you at all times. Data backup and disaster recovery solutions should work together to protect your data and ensure business continuity in the event of an attack, natural disaster or other threat. EDSI Veeam Extreme, which offers comprehensive, cost-effective disaster recovery through Veeam Cloud Connect, eliminates the need for a second disaster recovery site by sending data to an offsite disaster recovery cloud in a secure manner.

For More Information

To learn more about Veeam backup and recovery solutions from EDSI, please call us at (866) 302-EDSI (866.302.3374) or visit edsitechnology.com/veeam.