

# A guide to Business Continuity and Disaster Recovery planning and implementation using Veeam

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**Modern** Data Protection  
Built for Virtualization | **#1 VM Backup**

## Executive summary

Although Business Continuity (BC) and Disaster Recovery (DR) planning have been viewed for years as activities that would be used in a limited number of sectors across businesses, the increasing reliance on computing resources has forced organizations of all sizes to adopt new measures to protect their data and reduce the risk of going offline for long periods of time. With the trend toward virtualization and cloud computing, risk/disaster management has had to adopt new concepts with the challenge of achieving the best protection and recovery results, while keeping the solution simple and cost effective. Veeam® presents a full set of tools and technologies that help in complying with the difficult-to-achieve requirements of today's IT operations DR and BC standards for both VMware and Hyper-V environments.

This white paper emphasizes the different ways Veeam Backup & Replication™ assists in planning and implementing a DR and BC strategy.

## Reducing the backup window

The first assessment of any solution to be used for BC and DR should focus on achieving a better Restore Point Objective (RPO) and Restore Time Objective (RTO). Reducing the backup window is a key factor in improving RPOs and RTOs. The backup solution in place should leverage available resources and technologies to fulfill short backup windows.

**Backup from Storage Snapshot:** This technology will not only reduce the backup window but will also eliminate the load on the production infrastructure.

**Incremental Backup using Changed Block Tracking (CBT):** CBT technology allows the backup solution to perform faster incremental backups that can be as much as 20 times faster than traditional methods. Originally available from VMware, Veeam has implemented the same technology for Hyper-V as well.

## Performing backup using the 3-2-1 rule

Storing backup locally is a first line of defense but it is not sufficient. Data protection experts advise using the 3-2-1 rule (three copies, two types of media, one offsite location) when planning for DR strategy. With Veeam Backup & Replication 7, this is achievable using two features.

**Backup Copy Job:** This feature was introduced to give backup administrators the power to copy the backup files to a secondary repository—either onsite or offsite. The copied files have the same format as Veeam Backup files and can be used to perform the same restore operations as the original files including Instant VM Recovery™, file-level recovery, etc.

Moreover, Veeam Backup & Replication offers a built-in **WAN Accelerator** that helps transfer these files to an offsite location through a connection of any speed—even unstable links. Veeam **WAN Acceleration** uses both global data deduplication and global data caching, making data transfer across sites up to 50 times faster.

**Backup to Tape:** Complete the circle of applying the best practice by allowing administrators to archive backup files to the Tape Library. In addition to archiving backup files, Veeam Backup & Replication can also archive any other files using Windows Tape Format.

Veeam Backup & Replication is able to manage the Tape Library using several methods, including tape barcoding, media pool management and custom retention policy per set.

## Backup to the public cloud

Use of **Infrastructure as a Service (IaaS)** to reduce running costs is increasing among many organizations as part of their public cloud adoption. Veeam leverages public cloud storage by facilitating the backup of the virtual datacenter to more than 15 cloud storage providers including Amazon, Azure and Google cloud storage platforms. Veeam Backup & Replication Cloud edition helps companies that are considering the cloud as an offsite DR target to store their backups using built-in encryption to comply with any security requirements.

To help with cost planning, Veeam Cloud Edition includes a cost estimator and bandwidth controller to limit traffic use during business hours.

Nevertheless, Direct Guest OS File Recovery from the cloud is also available.

## Replication to the DR site

Datacenters can be vulnerable to different types of hazards, whether fire, earthquake or flood. Today's business rules demand continuous uptime, even during such situations—a challenge for crisis management teams who must deal with the direct outcomes of such catastrophes. For that reason, speed and automation are critical. Fast provisioning of resources has been one of the strongest arguments for virtualizing the datacenter, and this should be true as well for the readiness of a DR site.

Veeam Backup & Replication fills a void in this complex design process by providing the ultimate solution for IT operation continuity from the DR site. Veeam replication technology achieves these goals by using the near-continuous data protection (near-CDP) approach with the best RTOs and RPOs.

Veeam also provides an intelligent failover mechanism—which includes network mapping and re-IP—allowing automation of processes normally performed manually that are required for a successful start from the DR site.

## Recovery plan

Performing backup and replication without a recovery action plan is not sufficient. Again, in talking about a virtual datacenter, IT staff should know that virtualization means fast provisioning of resources, and this should also be the case for data protection and DR.

Backup administrators should deal primarily with two situations:

**Partial failures:** In this situation, some of the services are experiencing an outage. As a first line of defense, the local backup should be used. Compared to legacy backup solutions, Veeam provides an innovative yet easy and fast way to leverage the backup files taken locally: **Instant VM Recovery**. This technology allows the hypervisor to start any virtual machine (VM) directly from the backup storage without performing any staging activities, thus allowing normal operations to resume in minutes. In some cases it would be sufficient to perform OS **file-level recovery** or granular **Application Item Recovery**, which can also be carried out directly from the backup without the need to re-hydrate data or prepare any additional resources.

**Total failures:** In this case, the main site is blacked out because of a hazard. The DR site will take over the production site until it is brought back online. Veeam replication technology provides a smooth transition using an intelligent **Failover** mechanism as described above, and similarly when the main production site comes back online through **Failback**.

## Disaster aftermath

Back to the 3-2-1 rule—offsite and tape backups are the tools to use in rebuilding the production datacenter. Veeam will help repopulate all VMs whether from disk backups, tapes or from the replicas running in the DR site.

Please note that as part of the recovery plan, a list showing the servers' startup sequence should be made available in both hard copy and electronic format and stored outside of the production site.

## Proactive approach and compliance with auditing checklists

In any plan, testing is a vital component—if it's not performed, thousands of hours of planning and implementation could be wasted if the target isn't be achieved. The same concept is applied to DR and BC planning. It can be meaningless to consume resources and manpower for backup and replication operations if no tests have been conducted on a regular basis. Some companies do include DR and BC testing in their audit checklists. But with modern virtual infrastructures shouldn't the testing be automated and accurate? Legacy tools don't touch this point, so how does Veeam deal with such requirements?

**SureBackup<sup>®</sup>**: This is an innovative technology, offered exclusively by Veeam. It allows the backup administrator to test every restore point automatically. The job not only scans for data integration, but the backed up machine is started in an isolated network where the VM files, the OS and the contained applications will be tested. Once the test is completed a detailed report is sent to the administrator about the success or failure of the backup job, including the root of any failure.

**SureReplica**: Similar to **SureBackup**, this job allows you to simulate a real disaster scenario but it performs a simulated Failover into an isolated environment inside the DR site.

## Conclusion

In a world where trends like cloud computing and virtualization are dominant and where administrators face the challenge of keeping costs low while meeting strict standards and SLAs, Veeam presents the ultimate technology for virtual datacenters—Modern Data Protection™. With a full understanding of virtualization and the need to protect data, Veeam Backup & Replication draws the highlights for planning and implementing a DR and BC strategy.

## About the Author



**Mehmet Gonullu** is a Systems Engineer for Veeam. Mehmet has more than 12 years of experience in the IT business, starting his career as a software developer and a technical support representative and moving to the position of Systems Engineer, where he has built and managed datacenters from end to end. In his consulting and business development areas, Mehmet's focus is on virtualization, cloud computing, DR and IT Management. Mehmet's hobbies include books, electronic gadgets and his home lab.

## About Veeam Software

Veeam® is Modern Data Protection™ - providing powerful, easy-to-use and affordable solutions that are Built for Virtualization™ and the Cloud.

**Veeam Backup & Replication™** delivers **VMware backup**, **Hyper-V backup**, recovery and replication. This #1 VM Backup™ solution helps organizations meet RPOs and RTOs, save time, eliminate risks and dramatically reduce capital and operational costs. **Veeam Backup Management Suite™** provides all the benefits and features of Veeam Backup & Replication along with advanced monitoring, reporting and capacity planning for the backup infrastructure. **Veeam Management Pack™** (MP) extends enterprise monitoring to VMware through Microsoft System Center and also offers monitoring and reporting for the Veeam Backup & Replication infrastructure. Veeam also provides **free tools** for the virtualization community.

Founded in 2006, Veeam is privately-owned and has been profitable since 2009. Veeam currently has over 20,000 ProPartners and more than 80,000 customers worldwide. Veeam's global headquarters are located in Baar, Switzerland and has offices throughout the world. To learn more, visit <http://www.veeam.com>.



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Powerful

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## Veeam Backup & Replication

### #1 VM Backup for VMware and Hyper-V

Virtualization changes everything – especially backup. If you've virtualized on **VMware or Hyper-V**, now is the time to move up to the data protection solution Built for Virtualization: **Veeam Backup & Replication**.

Unlike traditional backup that suffers from the "3C" problem (missing capabilities, complexity and cost), Veeam is:

- **Powerful:** Dramatically improve your RPOs and RTOs
- **Easy-to-Use:** Save time and eliminate risk
- **Affordable:** Reduce TCO and increase ROI

Join the 80,000 organizations who have already modernized their data protection with Veeam. **Download Veeam Backup & Replication** today!



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