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Next-Gen Hyper-Convergence Meets Next-Gen Data Protection

A best practice guide for choosing a modern data management solution

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IN THE BATTLE TO BE EVER MORE AGILE, businesses are evolving their IT environments to take advantage of highly virtualized, hyper-converged infrastructure (HCI). In the process, however, they may well find their legacy backup and recovery tools can't keep up.

The sticking point comes with legacy solutions that were born before virtualization and HCI; they are tasked with backing up virtual machines and virtualized storage systems, with predictably poor results. Such tools can't deliver on the recovery time objectives (RTOs) and recovery point objectives (RPOs) that always-on businesses demand.

This paper explores why enterprises need HCI platforms integrated with reliable backup and recovery for highly virtual environments, while putting a premium on data Availability. That's what Veeam and Cisco deliver with the combination of Cisco HyperFlex and Veeam Availability Suite, a solution purpose-built for the virtual world.

Hyper-convergence benefits and challenges

By pre-integrating server, storage, and networking in a single enclosure, HCI brings numerous advantages, according to a 2019 IDC survey of 300 HCI users. Respondents liked HCI's ease of deployment and management, lower CapEx and OpEx, scalability, and performance. In fact, 54% of respondents plan to replace existing legacy systems with HCI.

One challenge HCI presents, however, is that traditional backup and recovery systems were not built to deal with virtual environments where workloads are constantly shifting. These legacy systems are simply too slow, rendering them unable to back up and, more importantly, recover files in a timely fashion.

The problem is widespread. The 2019 Veeam Cloud Data Management report, based on a survey of 1,575 senior business and IT decision makers worldwide, found 73% of respondents are not meeting their own service-level agreements (SLAs) for recovery capabilities. This has led to downtime with an average financial impact of $20.1 million per company.

Nearly as many respondents (69%) admit they have a gap between how fast they can recover applications and how fast they need to recover them in order to avoid significant damage to the business (also known as a recovery time objective, or RTO). That means in more than one out of three attempts, recovery efforts either fail, take too long, or recover an inadequate amount of data.

Users at organizations of all sizes recognize the problem, the IDC survey makes clear: 80% of respondents said built-in data protection for HCI is a critical feature when evaluating HCI options. The finding is not surprising, given that 63% of survey respondents are using HCI for production applications, not just evaluating or testing.

But users don't want to have to deploy another data protection tool just to deal with HCI deployments. Three out of four IDC survey respondents believe that HCI compatibility with existing data protection software is either important, extremely important, or critical.

The Veeam report states that only 37% of respondents were "very confident" in their current solution's ability to reliably back up and recover virtual machines within their SLAs. Making matters worse, respondents experienced an average of five unplanned outages over the previous 12 months, with 82% experiencing two or more unplanned outages; only 6% experienced none. The average outage length was 65 minutes.

And losses can add up quickly. Loss of data from downtime for just one mission-critical application costs respondents an average of $102,450 per hour. Even non-mission-critical data can cost $82,175 per hour, the Veeam report found.

Availability requirements in a hybrid world

To avoid such losses—and meet business requirements in a hybrid, hyper-converged world—businesses will need to step up their game.

Providing real peace of mind means companies must meet RTOs of less than 15 minutes, whether to restore an entire virtual machine (VM) or an individual file. That's the kind of performance it takes to meet SLAs around data Availability and to prevent data loss.

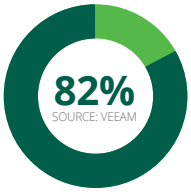
Achieving that goal requires an Availability solution that is tightly integrated with the HCI solution, and able to take snapshots directly from it to use as backups.

The solution should also perform backup and replication at once, to improve performance and to replicate data to wherever it may be needed. That may mean replicating to another location at the same site, to remote or branch offices, or to the cloud.

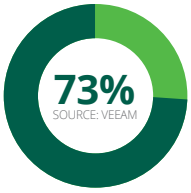
Creating complete replicas of production VMs, and consistently keeping them in sync, is also crucial. If a production VM or server fails, administrators can then fail over to the VM replica. Replicas can also be used for testing and troubleshooting applications, reducing risk to the production environment.

WAN acceleration is another requirement, as

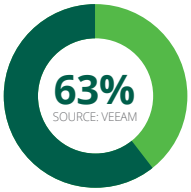
Experienced two or more unplanned outages during previous year



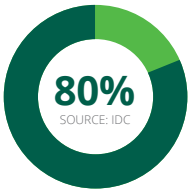
Not meeting SLAs for recovery capabilities



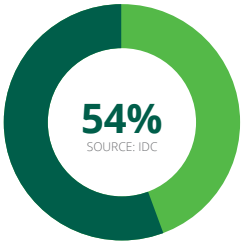
Not "Very confident" in current solution to back up and recover virtual machines within SLAs



View data protection for HCI as a critical feature



Plan to replace legacy systems with HCI



Veeam provides visibility into the storage environment, along with analytics and actionable insights to help improve data management capabilities and operational performance and ensure regulatory compliance.

it supports speedy backups for offsite locations. Capabilities such as data deduplication and compression are also helpful in improving performance.

Finally, organizations need complete visibility into their Availability solution, including 24x7 monitoring and alerting capabilities. The tool should include capacity planning, usage forecasting, and trend reporting to enable planning future storage requirements.

Cisco & Veeam: A next-generation solution

Meeting these requirements requires an Availability solution that is tightly integrated with the HCI platform. Building on years of working together on Availability solutions for high-performance environments, that's exactly what Cisco and Veeam deliver.

Cisco HyperFlex

It starts with Cisco HyperFlex, an HCI solution that includes not just compute, storage, networking, and virtualization software, but also an integrated network fabric that supports software-defined networking capabilities. HyperFlex features continuous data optimization, enabling organizations to increase capacity while using data deduplication and compression to maintain performance.

It is simple to deploy and use, thanks in part to a unified management interface, which helps improve the operational efficiency of data center staff. HyperFlex is also highly scalable and flexible. Companies can scale computing and storage capacity independently as needs change, rather than having to scale box-by-box.

Veeam Availability Suite

Veeam Availability Suite is an agentless, application-aware solution that supports RTOs and RPOs of less than 15 minutes for all applications and data running on HyperFlex.

The solution can leverage native HyperFlex snapshots, which provides a source for continual, automated data protection. It has several important features and capabilities, including:

- **Granular file recovery** for applications including Microsoft Active Directory, Exchange, SharePoint, Oracle, and more
- **Instant VM recovery** directly from HyperFlex storage snapshots as well as file-level and item-level recovery
- **More than double the backup performance** compared with standard VMware backups
- **Improved performance of production VMs,** from removing high-impact VMware VM snapshots
- **Up to 2 times faster copy speed** compared to standard VMware vSphere APIs

For disaster recovery (DR), Veeam fulfills the requirement for seamless backup and replication across HyperFlex systems located in a single data center, multiple distributed data centers, branch offices, and the cloud. It can also replicate to any other VMware vSphere environment. Backups can be stored on secondary storage, cloud, or tape.

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Two deployment options

Enterprises have two options for deploying Veeam Availability Suite with Cisco HyperFlex, both delivering all of the Veeam capabilities:

- Veeam with Cisco HyperFlex
- Veeam on Cisco HyperFlex

With the first option, Veeam Backup & Replication runs on a Cisco UCS Backup Repository, delivering Availability, protection, and DR by mirroring data within the HyperFlex cluster, with proactive self-

healing in case of hardware failure. Veeam also provides replication between both local and distributed HyperFlex clusters, offering site-level DR.

Veeam on Cisco HyperFlex is a turnkey system, with a fully populated Cisco HyperFlex system plus Veeam software in a single bundle, available in 3-, 5- or 8-node configurations. This approach is the fastest way to provide comprehensive Availability to enterprise apps It provides the scalability inherent in Cisco HyperFlex to extend to your data Availability solution—and is backed with unified support from Cisco.

Cisco + Veeam: Better together

Modern, hyper-converged data centers require new levels of data protection beyond what legacy backup and recovery systems can deliver. To meet RTOs and RPOs, and eliminate Availability and protection gaps, companies must be able to instantly recover applications and data from any location, including any cloud.

The combination of Cisco HyperFlex and Veeam Availability Suite delivers on all fronts. Its flexible, scalable architecture ensures Availability for the always-on enterprise.

The German gas and electric utility Schleswig-Holstein Netz AG opted for Cisco HyperFlex to keep up with growth in the monitoring system for its gas and electric grids, which together span 68,500 km (over 40,000 miles). It was already using Veeam Availability Suite in its VMware vSphere environment so opted to use it for the Cisco HyperFlex implementation as well.

"The Cisco and Veeam solutions simply play very well together at all levels," said Kai Lannte, system administrator for Schleswig-Holstein Netz. "This gives us exactly the combination of maximum Availability and efficiency that we need for secure and economical network operation."

Another example is Akris, an international fashion brand based in Switzerland with stores worldwide. When the company needed a scalable and secure infrastructure, it chose Cisco HyperFlex and Veeam Availability Suite. "Now with deep snapshot integration with HyperFlex, our backups and recoveries will be even faster, helping us deliver 24x7 operations," said Akris CIO Thomas Käser.

That's the power of Cisco and Veeam, a partnership that began in 2013 with joint Availability solutions for Cisco UCS. Continuing to work closely with Cisco has enabled Veeam to become the first data protection vendor to earn a Cisco Validated Design for Cisco HyperFlex.

Veeam is also among a select group of software vendors chosen to participate in Cisco's SolutionsPlus program. That means HyperFlex solutions pre-configured with Veeam Availability Suite can be ordered from the Cisco Commerce Workspace (CCW), the quoting and configuration tool that Cisco and its partners use. Solutions ordered from CCW are pre-validated and sized for specific workloads, significantly reducing customer deployment risk.

Customers can rest assured that Veeam and Cisco together deliver a simple, reliable, and flexible data management solution that is purpose-built for a modern, virtual world and can stand the test of time.

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To learn more about how Cisco and Veeam can fulfill your cloud and hyper-converged data management needs, visit: **go.veeam.com/cisco-veeam-digital-hub**

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