



VEEAM CLOUD CONNECT REPLICATION

**DRaaS that is extremely powerful and
extremely easy**

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AVAILABILITY
for the Always-On Enterprise™

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In 2014, Veeam® released Veeam Cloud Connect as part of Veeam Availability Suite™ v8. Veeam Cloud Connect was a new technology that allowed the easy creation and consumption of off-site backup repositories. It was the first solution specifically designed around service providers, both from a technical and a business point of view. The extreme ease of use combined with the powerful capabilities within Veeam Cloud Connect made it an instant success. Within the first year, more than one thousand service providers began offering off-site backup services based on Veeam Cloud Connect.

Veeam Cloud Connect Replication, easy disaster recovery for everyone

Veeam Availability Suite v9 will bring Veeam's cloud technology to the next level, thanks to Veeam Cloud Connect Replication, a fast, secure, cloud-based disaster recovery (DR) solution.

DR is a great solution to increase the Availability of modern data centers. It does so by leveraging replication technologies and creating off-site replicas of virtual machines (VMs).

But replicating VMs is just a part of the problem to be solved: In order to make it a proper service, both end users and service providers need a solution that has a complete set of features and capabilities that go beyond replication.

The challenges with doing it yourself

With today's Always-On Business™, every IT shop, regardless its size, needs to have a secondary site. A secondary site tremendously increases the Availability of their application(s) because any workload can be powered on instantly at the DR site if any issue occurs at the primary site.

Virtualization made replication services easily accessible, configurable and usable. Veeam Backup & Replication™, as the name implies, has included replication capabilities since its very first version.

However, when businesses start to plan for a DR site failover, they are faced with other problems: First, the capital expenses of building and maintaining the secondary site. In a second location, owned or rented (for example in a colocation facility), one needs to deploy new hardware and software according to the size of their production environments, configure it and then manage it, virtually doubling their IT infrastructure efforts. Also, because production workloads are running mostly within the primary site, the secondary site is rarely used, making the cost even higher when compared to its value. In the past, only large enterprise organizations had the necessary budget to afford a private secondary site. Today, however, the search of a different solution is not limited to small and medium customers — even large organizations are looking for ways to reduce their capital and operational expenditure while retaining the possibility of having a DR site.

Fast, secure disaster recovery-as-a-service (DRaaS)

DR is one of those situations in which a cloud-based solution fits perfectly. By renting resources from a service provider on a pay-as-you-go model, end users have the same final result — CPU, ram, storage and networking resources available for failover operations — without any capital costs or the burden of designing, deploying and managing the DR site daily. While service providers still incur those same IT resources needed by a private DR site, they are able to build, scale and share those resources across multiple businesses as a service, driving overall costs down for both the DRaaS provider and the end customer.

However, as stated before, VM replication is just the start of the complete solution.

VM replication through Veeam Cloud Connect is easy to use and simple to set up, thanks to a single TCP port connectivity protected by a secure, reliable SSL/TLS connection from the customer to the DRaaS provider. So, there's no need to set up and maintain VPN connections, or open multiple ports in customer firewalls. The single tunnel is used for any kind of traffic: Replication management traffic, actual VM data transfers and even inter-VM communications during partial failovers. All communications are encapsulated into the single tunnel. Once the connection is established, there's no need for any additional network configuration.

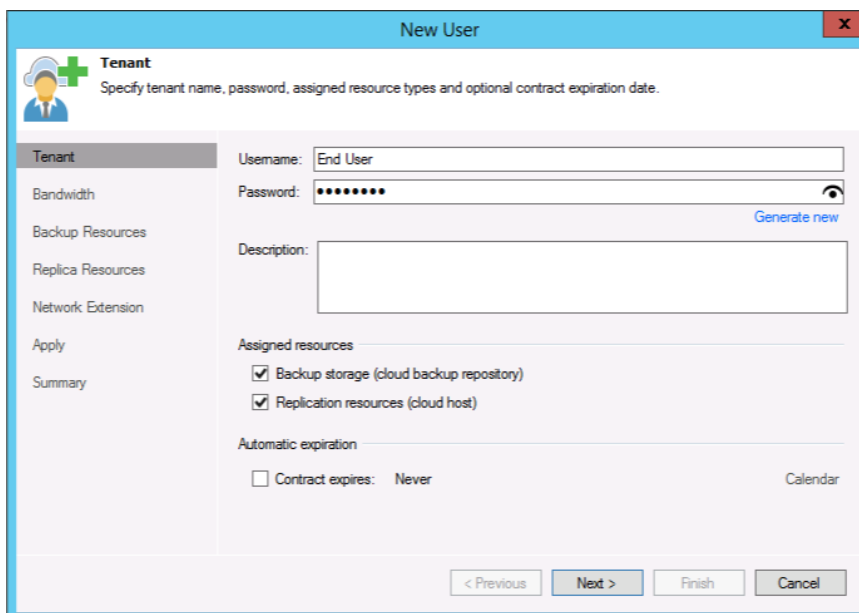
Service provider multi-tenancy

Infrastructure resources at the service provider are completely multi-tenant, and providers can lower the price of the solution by safely sharing the same infrastructure among different customers.

Multi-tenancy is managed by Veeam Cloud Connect without any need for additional components: The simple hypervisor (both VMware vSphere and Microsoft Hyper-V are supported) is all that the service provider needs to offer the service.

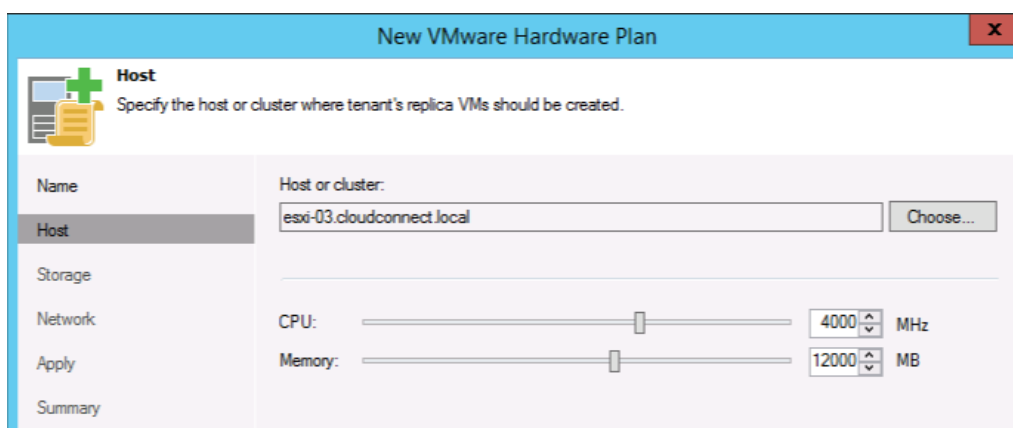
Veeam cloud connect replication. DRaaS that is extremely powerful and extremely easy

At the service provider, a customer is identified as a **tenant**:



An end user can rent backup resources and the new replication cloud host resources from the service provider at the same time.

The service provider defines the amount of resources assigned to a tenant using a **hardware plan**. This is the sum of CPU, memory, storage and number of available networks assigned to an end user:

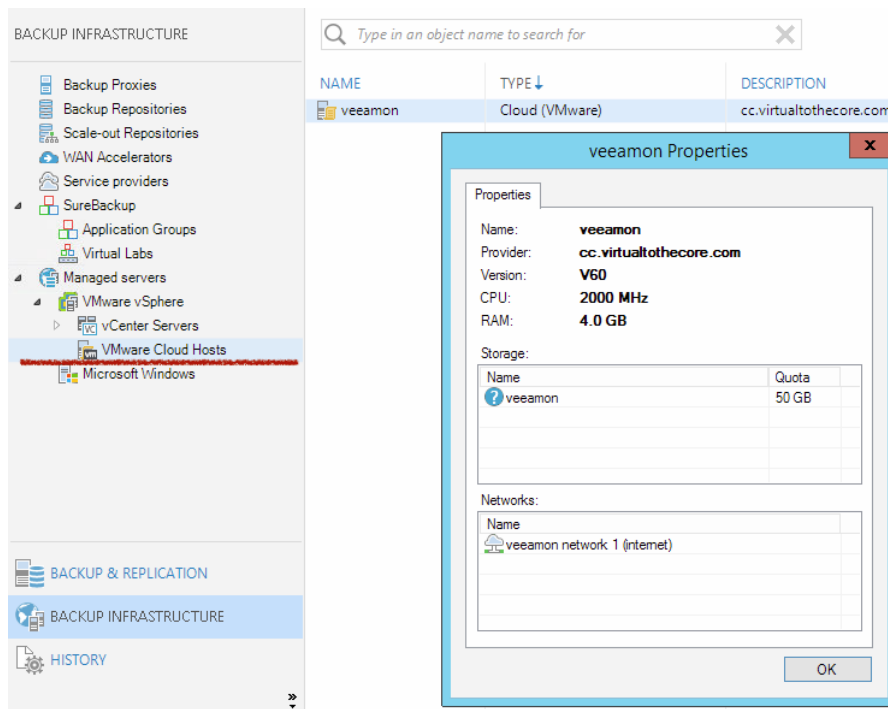


The hardware plan can be modified by the DRaaS provider in real time, based on the changing needs of the end user consuming it. By using RESTful API, the service provider can develop a web portal to expose to their customers, so that the end user themselves can adjust the hardware plan in a fully self-service fashion, if and when needed.

Replication via Veeam Cloud Connect made easy

Compute resources are abstracted on the end-user side, so that upon subscribing to the service and connecting to the service provider, the end user will see a virtual cloud host, which is a multi-tenant view of the assigned DR site resources with CPU, RAM, storage and networking resource allocations.

The cloud host shows up in the list of managed resources on the customer side, exactly like any other local resource. Here the end user can see the service provider fully qualified domain name (FQDN), the version of the hypervisor in use and the resources assigned by the DRaaS provider via the agreed upon hardware plan.

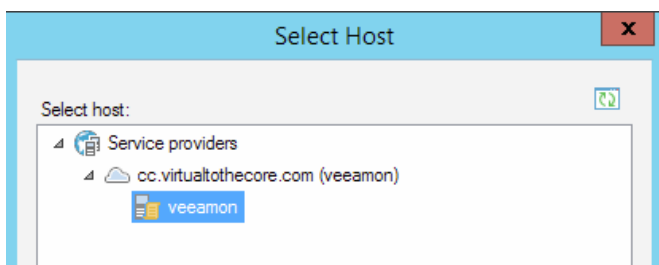


Thanks to this abstracted view, the user can consume the cloud host as the replication target for replica jobs without any changes in the user experience. The same Veeam replication job can be configured to replicate VMs to Veeam Cloud Connect.



By simply selecting **cloud** as the destination, end user can see the available hardware plan(s) configured by the service provider.

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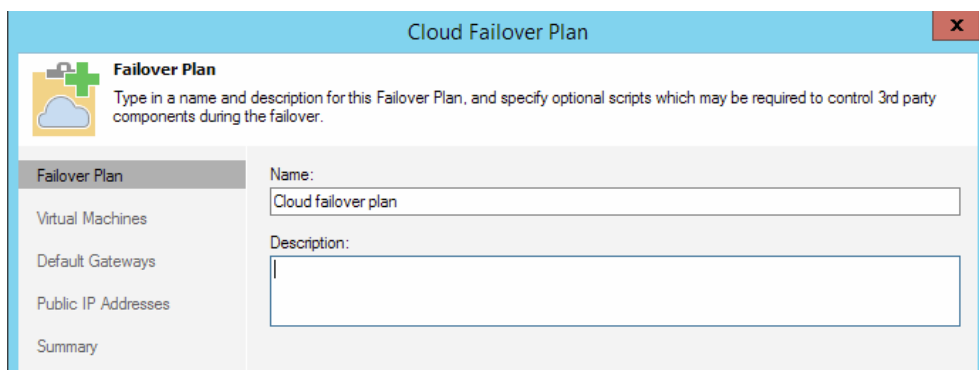
All options for regular Veeam replication jobs are available as always, including WAN acceleration (if this is offered by the service provider), application-aware processing and scheduling.

Once the job is configured and replication is executed, replica VMs will show up in the end-user console, ready to be used:

NAME	STATUS	CREATION TIME	RESTORE POINTS	REPLICATION LOCATION	ORIGINAL LOCATION
ecommerce	Ready	10/23/2015 7:18 PM	4	cc.virtualtothecore.com\veeamon	vcenter.veeam.local\DRS Cluster

Full and partial site failover

A strong and reliable failover plan is critical for any DR strategy. With Veeam Cloud Connect DRaaS, you have multiple options for failover. As you can imagine, **full site failover** is available and can be done by configuring failover plans, specifically cloud failover plans:



There is even a web portal in which you can kick off a full site failover with just a few clicks from your smart phone.

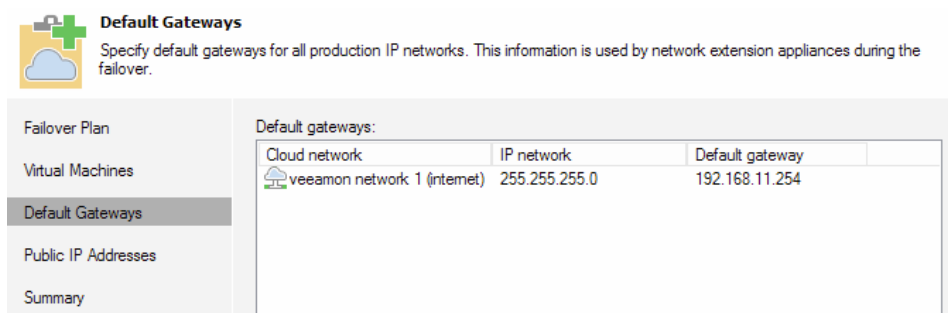
In addition to this, another powerful innovation in Veeam Cloud Connect Replication is **partial site failover**. With that, end users are able to partially failover individual workloads to the DR site, while other VMs are still running at the production site.

Networking complexity — now simplified!

One of the main goals of Veeam Cloud Connect Replication is the removal of the biggest pain point of any DR service: Networking. Both full site failovers and partial failovers will leverage built-in network extension appliances, which will simplify networking complexity and preserve communication between running VMs regardless of physical location — even without having to make any changes to replica TCP/IP settings before, during or after failover.

As you can see in the Cloud Failover Plan, there are additional options compared to a regular plan, specifically default gateways and public IP addresses. This is because Veeam Cloud Connect, together with advanced image-based replication, will offer a complete networking overlay technology — another key cloud innovation available with Veeam Cloud Connect Replication. Unlike other solutions, Veeam Cloud Connect Replication will not only manage data replication, but also the network connections between the two sites.

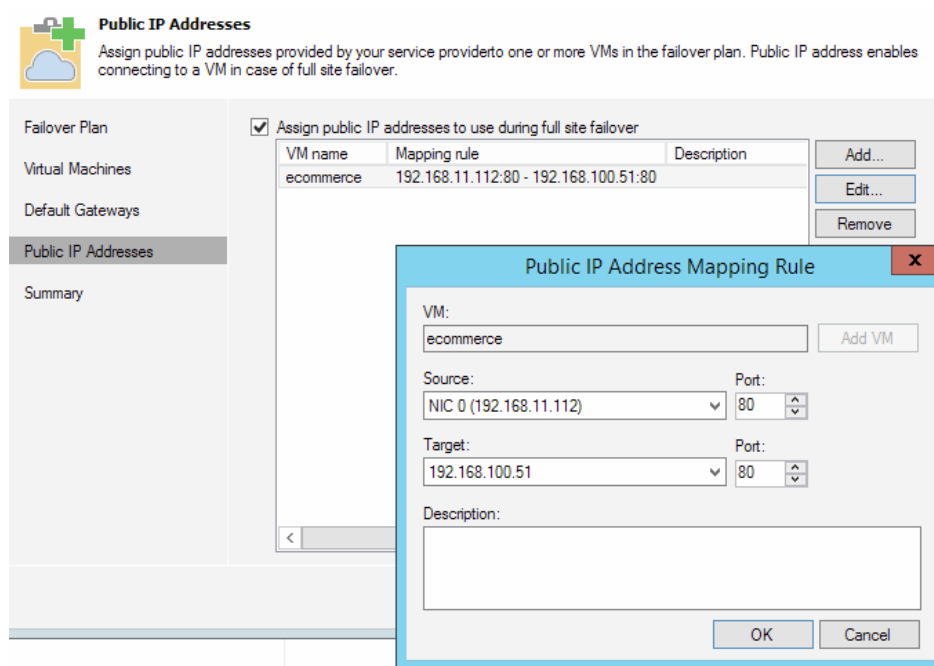
During the configuration of the Cloud failover plan, the end user will replicate the configurations of their own environment into Veeam Cloud Connect:



Thanks to this option, there is no need to change any IP configuration when a virtual machine is powered on at the DR site. The network appliance at the DRaaS provider site will either connect to the other appliances at the end-user site (during a partial failover), creating a stretched Layer 2 network. During a full failover started by invoking a failover plan, the appliance will act as the VMs' new default gateway. This is why the appliance needs to know the original gateway IP that it has to emulate during the failover.

If there are services that need to be exposed to the outside during DR, the service provider can assign public IP addresses to the end user. In the Cloud failover plan, the customer will configure destination network address translation (DNAT) rules, so a request arriving from the internet to the public IP of the service provider — this IP is loaded into the external interface of the network appliance — will be forwarded to the internal VM:

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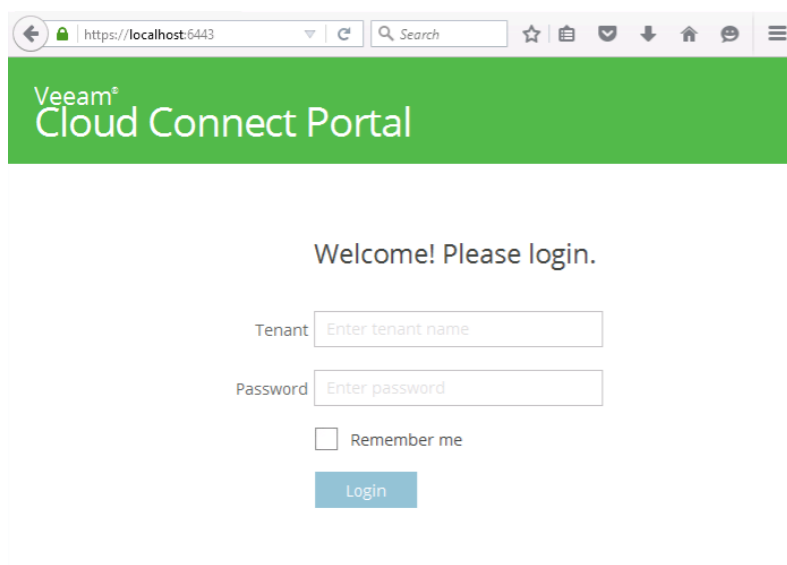


Self-Service

Self-service is paramount to any cloud service, and Veeam Cloud Connect is not an exception. Thanks to the complete support of automation via RESTful API and Powershell, service providers can automate any operation within Veeam Cloud Connect and expose self-service portals to users. Users can subscribe, edit hardware plans, and even execute failover plans by themselves via automation.

The end- user web portal

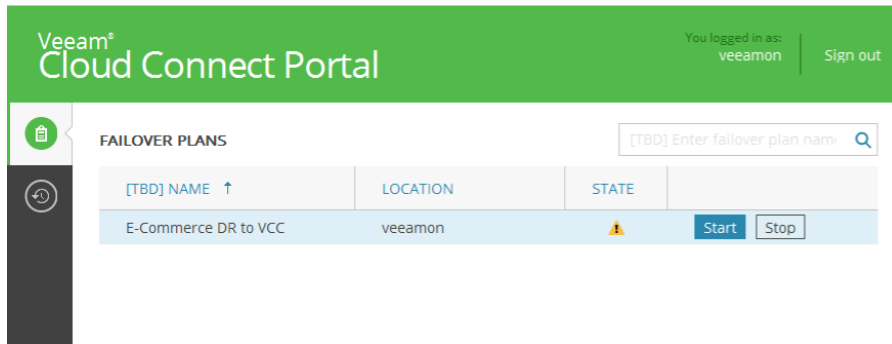
In case of a real DR situation, the service provider has the ability to offer up the Cloud Connect Portal for end users to take advantage of.



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If anything major happens to the end-user site, it's likely that the Veeam console is among the lost resources. In order to start a failover plan, the user needs another option, and the solution is the Cloud Connect Portal.

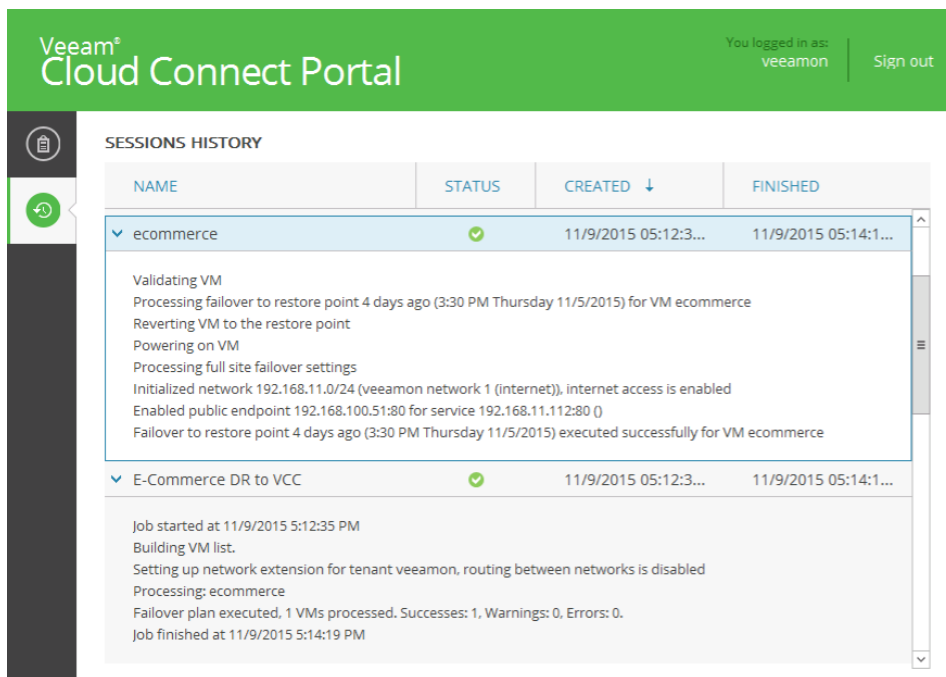
This web portal runs at the service provider and is accessible to the end user from any device and any location. Using this portal, the end user is able to log in with their own credentials and start any failover plan on their own, without requiring any intervention from the service provider.



The portal is designed to be as simple as possible, because during a DR situation, users may panic and might make a mistake. For this reason, the portal immediately shows the available failover plans with the option to start and stop them.

Cloud failover plans are created by the users and stored at the service provider, ensuring they're not lost during an outage.

Once the end user has started a cloud failover plan, he can follow the progress of its execution directly in the portal:



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Each plan is executed as configured, the network appliance is started and each virtual machine published at the service provider is then reachable with the assigned public IP address and the TCP/UDP port configured by the user.

Before you know it, your VMs are back up and running with little to no disruption to end users.

Conclusion

In this paper, we gave you an overview of the great possibilities offered by Veeam Cloud Connect Replication.

Veeam Cloud Connect is included in all paid editions of Veeam Availability Suite, Veeam Backup & Replication and Veeam Backup Essentials™ at no additional charge and with no additional licensing required. However, you will need the required resources from a Veeam Cloud & Service Provider (VCSP) partner that supports Veeam Cloud Connect Replication.

As we discussed, this technology makes DRaaS extremely powerful and, at the same time, extremely easy. You can find a VCSP partner easily on the Service Provider Lookup page:



<https://www.veeam.com/service-provider-lookup.html>

You can look up service providers by both the area in which they do business and the actual data center location by country.

About the Author



Luca Dell'Oca (vExpert, VCAP-DCD, CISSP) is EMEA Evangelist for Veeam Software based in Italy. Luca is a popular blogger and an active member of the virtualization community. Luca's career started in information security before focusing on virtualization. His main areas of expertise are VMware and storage design, with a deep focus on Cloud Service Providers and Large Enterprises.

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About Veeam Software

Veeam® recognizes the new challenges companies across the globe face in enabling the Always-On Business™, a business that must operate 24/7/365. To address this, Veeam has pioneered a new market of *Availability for the Always-On Enterprise™* by helping organizations meet recovery time and point objectives (RTPO™) of less than 15 minutes for all applications and data, through a fundamentally new kind of solution that delivers high-speed recovery, data loss avoidance, verified protection, leveraged data and complete visibility. **Veeam Availability Suite™**, which includes **Veeam Backup & Replication™**, leverages virtualization, storage, and cloud technologies that enable the modern data center to help organizations save time, mitigate risks, and dramatically reduce capital and operational costs.

Founded in 2006, Veeam currently has 34,500 ProPartners and more than 168,000 customers worldwide. Veeam's global headquarters are located in Baar, Switzerland, and the company has offices throughout the world. To learn more, visit <https://www.veeam.com/>

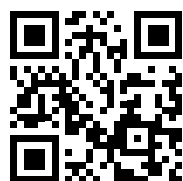
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