

**Into the cloud... based on a true story**

**Hyperscale  
cloud  
infrastructure  
hosts business  
critical  
applications**





**#1**  
most affordable CRM,  
according to Capterra



**+ 12,000**  
end users in one  
YetiForce  
installation



**+ 100**  
countries where  
YetiForce  
is used

## Executive summary

The YetiForce system is an advanced tool – based on the well-established Vtiger software – that helps companies increase their sales, carry out marketing operations, and manage daily customer relations. YetiForce is also the name of the company that developed this open-source CRM.

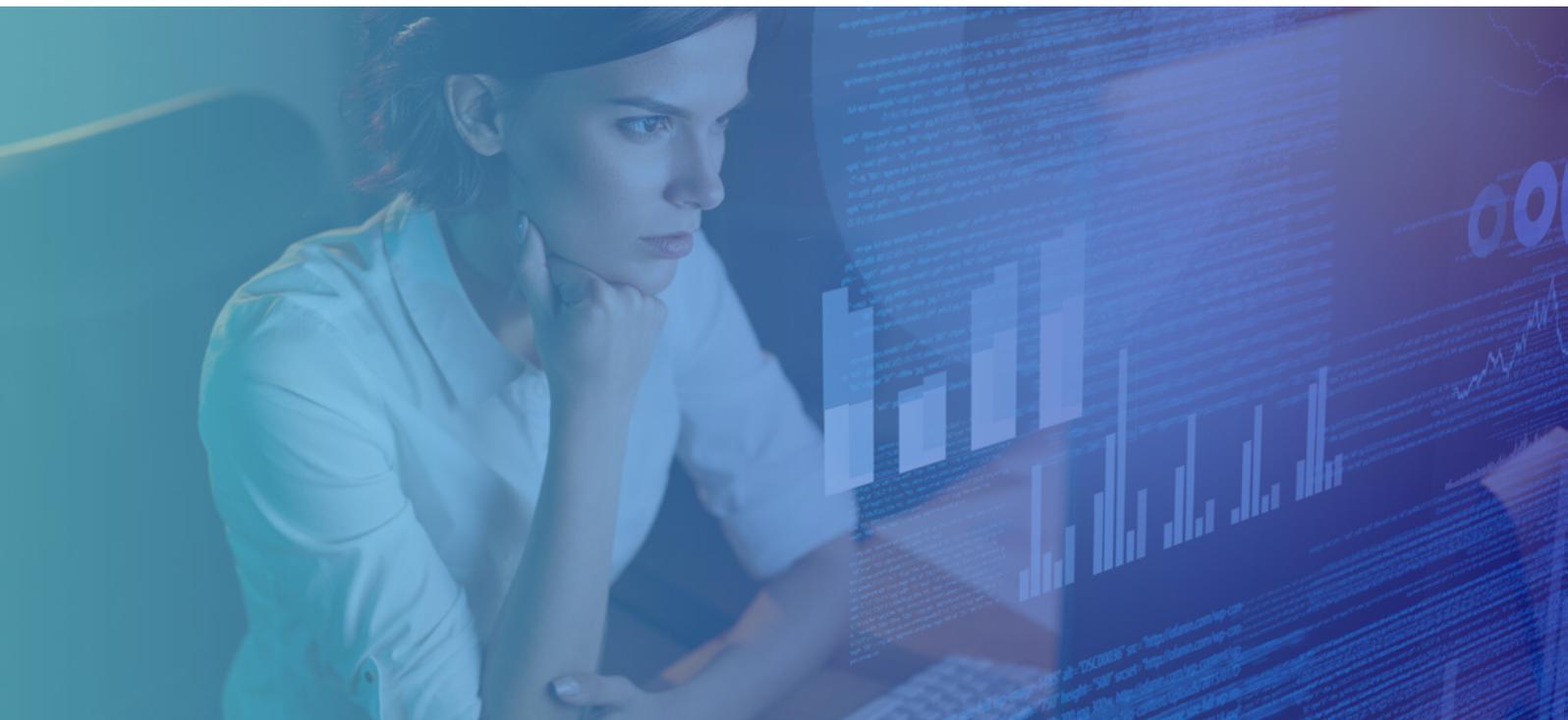
In 2014, the company decided to develop CRM software on its own. The main trigger for this decision was an increasingly difficult working relationship with Vtiger’s producer, for whom it had previously developed modules. Software imperfections and lack of reactivity from the manufacturer prompted Błażej Pabiszczak, CEO of YetiForce, to introduce the company to a new sector.

*“In open source, every iteration is better than the original.”*

**Błażej Pabiszczak, CEO of YetiForce**

As an advocate of open code, Błażej decided to use this model to create the YetiForce system. The company has since built its reputation on the support it offers for its solution and full-scale implementations in the cloud.

Błażej talked to us about plans for further development of the YetiForce system and why they implemented their own private cloud, using high-end OVHcloud [Dedicated Servers](#).



## The challenge

### **Building a high-performance environment to deliver YetiForce systems to businesses**

Aiming to provide a hosted version of the YetiForce CRM, the company first turned to traditional hosting solutions, such as shared hosting. Initial tests showed that solutions capable of running websites smoothly were not suitable for YetiForce's application, which was ten times larger than average.

As the system is processing customers' data, YetiForce puts great emphasis on all aspects of data security. More than 60 parameters are verified during the CRM's installation, all of which need to comply with the system's requirements for the installation to succeed. Shared hosting solutions often couldn't pass successfully those tests and few of them allowed setting changes. Also, YetiForce's system requires the DAV protocol – rarely provided in shared hosting offers.

The advanced CRM system, with over 800 database tables, requires a powerful processor and fast access to storage. Striving for maximum performance and security, without handing over full control of the infrastructure, YetiForce's CEO decided to build its own hosted private cloud.

From the beginning, the company only considered outsourcing to access the necessary resources. Building a local datacentre would be too expensive and would require an additional team of technicians, available 24/7. It was therefore decided to rent dedicated servers from a well-known and recognised provider.

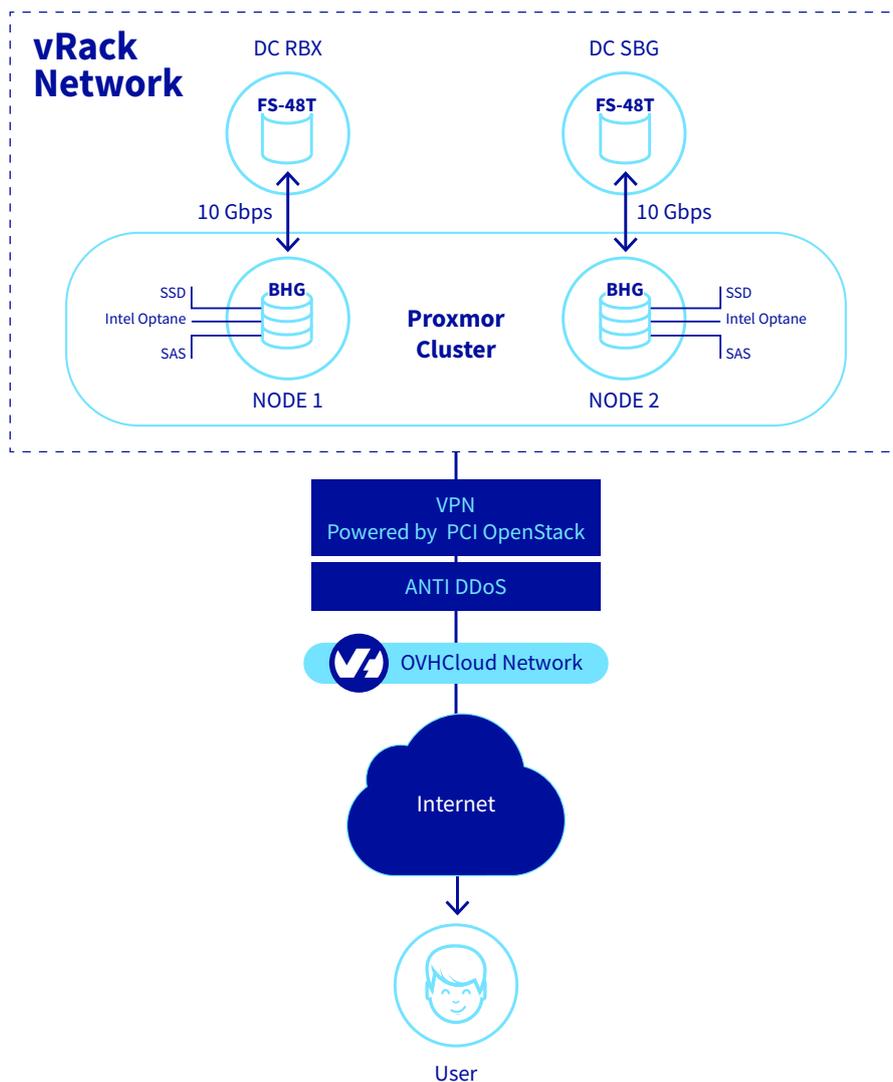
# The solution

## Private cloud infrastructure with unparalleled storage performance

There are plenty of ready-made private cloud solutions on the market, but the company focused on its own made-to-measure solution, built on Big HG servers from OVHcloud.

*“While searching for an ideal solution, we analysed the offers of AWS, Microsoft Azure and Google. We chose OVHcloud because of the price. With OVHcloud, we’ve achieved the best price/performance ratio, and by using top-of-the-line components, we know that we receive the best quality.”*

**Błażej Pabiszczak, CEO of YetiForce**



HG and Big HG servers stand out in the OVHcloud Dedicated Server range, with customisable configurations allowing users to choose from different CPU models, types and quantity of hard drives, as well as the amount of RAM.

The core of YetiForce's infrastructure is a hyper-efficient cluster of Big HG servers, equipped with two 36-thread 3.0 GHz Intel® Xeon Gold processors and 768 GB ECC RAM (2,666 MHz DDR4) each. These super machines hold 15 drives each, combined into three separate disk arrays for different purposes.

The first one comprises Samsung PM863a (0.8 DWPD) 3.8TB SSDs and handles the Proxmox VE system and backup databases. These drives are notable for their durable, consistent performance and high speed during random write/read (up to 97K/24K IOPS). The second array is designed for files and attachments processed in YetiForce software, and includes 10TB 7.2K HGST Ultrastar He10 drives with a 12Gb/s SAS interface. These drives are highly reliable and reach up to 2.5 million hours MTBF (Mean Time Between Failures).

The third RAID array combines high-performance Intel Optane P4800X hard disk drives, connected to the server via PCIe interface and accessible through the NVMe protocol. Integrating these technologies helped to achieve best-in-class performance. This powerful disk array hosts the latest version of MariaDB. MariaDB is not the only database software compatible with YetiForce CRM, but it proved to be the most efficient when run on this hardware.

### **Choosing the right database software – MySQL and MariaDB comparison**

Before choosing MariaDB as the database software for YetiForce SaaS, the company conducted tests to compare the performance of MySQL and MariaDB. The test (carried out with the sysbench 0.4.12. tool) was run through socket connections, which had proved in the past to be the most efficient solution. 210,000 queries (reading, writing, and other) and 10,000 transactions were performed during this test.



Number of transactions per second	SAS	SSD	NVMe
MySQL	37.17	154.59	161.59
MariaDB	57.53	313.89	373.01

Average time for 95% of queries	SAS	SSD	NVMe
MySQL	229.29	36.17	33.98
MariaDB	191.37	19.64	17.12

Total duration of tests	SAS	SSD	NVMe
MySQL	269.02	64.69	61.88
MariaDB	173.80	31.86	26.80

While verifying the capabilities of the database engine, YetiForce also checked the differences in performance of the disk arrays in their Big HG servers. NVMe drives proved to be the fastest, which is why the company used them for their MariaDB databases in production environments.

### Data protection and backup solutions

A secure infrastructure requires an appropriate backup strategy. To ensure the shortest recovery time in case of a failure, YetiForce has introduced a complex and multi-stage backup system. Each of the Big HG servers in the Proxmox cluster has one dedicated FS-48T [backup server](#) with 12 high-capacity disk drives, located in a separate datacentre to ensure geo-redundancy.

The first stage is a weekly backup of all VMs run directly from Proxmox. To avoid powering off the VMs, YetiForce uses snapshots to preserve the state of each machine at a specific moment. The snapshots are transferred through a secure vRack network and stored on a remote resource, in the form of the backup server. This procedure guarantees that there are always two copies of the entire state of the virtual machine, which allow for its restoration with a full hardware profile.

The next stage is daily rsync backups. The backup server connects to the virtual machine via a private network ([vRack](#)) and archives data using the hard link on Linux. This method enables quick backups, conserves disk space and, most of all, allows access to every single file. The FS-48T backup server, isolated from the main cluster, stores backups from the last 14 days.

To complement the copies stored outside the cluster, YetiForce also keeps daily backups of all databases locally, and incremental copies of virtual machines created by the Proxmox hypervisor every 30 minutes.

# The result

YetiForce, recognised by Capterra.com as the most affordable CRM system, is an advanced business tool that continues to evolve. As an open-source software solution, the system is developed not only by YetiForce employees, but also by an active online community, gathered around the project. Thanks to their activity on GitHub, the CRM is now available in 10 languages.

*“Our ambition is to create a comprehensive business solution, although our software has been forked from CRM. We’ve been working on additional elements to complement the YetiForce ecosystem, such ERP and DMS (Document Management System).”*

**Błażej Pabiszczak, CEO of YetiForce**

High-performance Big HG servers, along with Proxmox VE virtualisation, create a reliable and secure infrastructure for hosting business applications. Striving to offer highly available business tools to their customers, YetiForce have adopted the latest storage technologies and proven virtualisation solutions. This way, they have managed to close the performance gap between compute power and storage, and deliver unparalleled performance to their customers.

OVHcloud is a global player and the leading European cloud provider operating 400,000 servers within its own 30 data centres across 4 continents. For 20 years, the Group has been leveraging an integrated model that provides full control of our value chain, from designing our servers to managing our data centres through to orchestrating our fibre-optic network. This unique approach enables OVHcloud to cover, independently, the full spectrum of use cases for our 1.5 million customers in more than 130 countries. OVHcloud now offers customers latest-generation solutions that combine high performance, predictable pricing and full data sovereignty to support their unfettered growth.