



Loadbalancer.org helps a U.S. federal government health sciences university optimize its Dell ECS storage system

The IT department within a U.S. federal government health sciences university – that educates and develops uniformed health professionals, scientists, and leaders – was looking for the best way to optimize its Dell EMC ECS system, a software-defined, cloud-scale, object storage platform that delivers S3, Atmos, CAS, Swift, NFSv3, and HDFS storage services on a single platform.

Dell EMC ECS is designed to support rapid data growth, enable administrators to easily manage storage infrastructure under a single global namespace, and provide anywhere-access to content – and replacing its existing load balancer with virtual appliances from Loadbalancer.org enabled the client to make the system highly available, while at the same time make it simpler to use and manage.

Challenges

- Achieve high availability with Dell EMC ECS system while reducing complexity and risk

Solution

- Two Loadbalancer.org Virtual Appliances

Partnership Benefits

- High availability of the actual storage servers
- Scalability - if the client wants to add more servers in the future, it's very easy with our load balancers
- Zero downtime
- Wide protocol support as our appliances support multiple protocols including TCP, UDP allowing clients to handle all the potential workflow that they might want to prioritize
- Industry-leading consultation and support services by storage experts

Challenges

When the university installed its Dell ECS system, the vendor hadn't recommended a specific load balancer. At the last minute, the university decided to use HAProxy – a free, but manual and very time-intensive solution. However, the Network File System (NFS) clients that the university used to access storage were very old, and still used User Datagram Protocol (UDP) by default.

Like most layer 7 solutions, HAProxy doesn't support UDP (unless you count QUIC protocol), but is nonetheless a great solution for load balancing the latest NFS, when newer clients are available – for example, NFSv4 which is Transmission Control Protocol (TCP) only, and requires a far simpler list of ports. Since the university's system relied on older versions of NFS (v3 and below) using UDP, it had to use layer 4 solutions to load balance it fully for high availability. This enabled TCP to work with certain limitations, but the client found that it couldn't use the commands for listing mounts reliably, making it much harder to work with.



Solution

In a single interaction with the client, the solutions architects at Loadbalancer.org identified the root of the problem and suggested a working solution. As a result, the university installed two Loadbalancer.org virtual load balancers – we then helped the client move from a layer 7 configuration, to layer 4 load balancing using our appliances. Our engineers set up separate new layer 4 virtual services during the call, much to the satisfaction of the client who could see it working immediately. The Loadbalancer.org GUI (Graphical User Interface) is simple to use, unlike HAProxy's manual interface, and with our load balancers, the client could ensure that its

storage system was load-balanced much more reliably, than previously. We've worked extensively with leading storage vendors, enabling our technical teams to understand a client's requirements and networking environment to offer the best solutions to the technical problems that they may face.

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In this case, they helped the university with in-depth technical documentation such as deployment guides to ensure they could configure their new appliances, making the implementation process hassle-free for their engineers.

Results

Deploying the Loadbalancer.org virtual appliances helped the university to optimize its Dell EMC ECS storage system. By ensuring high availability of the storage servers, easy scalability (should they want to add more servers in the future), and zero downtime, our load balancers helped the client backup and safeguard the massive amounts of highly confidential data that it deals with day after day.

By transferring data in a fast and intelligent way, our load balancing solution removes bottlenecks that might otherwise impede the performance of the university's storage solution. As our appliances support multiple protocols including TCP, UDP, it helps the client handle whatever potentials workflow that they might want to prioritize.

In addition, the university benefits from access to Loadbalancer.org's industry-leading consultation and support services, helping them resolve any issues now or in the future, with the peace of mind that our knowledge and experienced storage experts are available when they need them.

About Loadbalancer.org

Loadbalancer.org's mission is to ensure that its clients' businesses are never interrupted. The load balancer experts ask the right questions to get to the heart of what matters, bringing a depth of understanding to each deployment. Experience enables Loadbalancer.org engineers to design less complex, unbreakable solutions - and to provide exceptional personalised support.