

EBOOK

Solving the exclusive challenges of object and other scale-out storage solution providers

Using ADCs to optimize your deployments



Storage solutions are not created equal

Optimize *your* solution.



Unique architecture



Unique support



Unique commercials



Challenges

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1. The storage revolution!



Why bother reading this?

Regardless of your solution, the chances are, you're facing similar challenges to the rest of the storage industry.



Changing customer needs

Demand for more integrated solutions

Source: [MIT Management Review](#) 



More competitive market

Need to stand out from the crowd

Source: [Mordor Intelligence](#) 



Economic pressures

Growth to remain weak in 2023

Source: [IME](#) 



2. Why load balance your storage solution?



Problems ADCs can solve...

1

Availability

2

Product stability

3

Performance

4

Multi-site resilience

5

Scalability

6

Visibility

7

Security

8

Support

9

Commercials



1 Availability

Pain point?	How load balancers can help
Customer lacks network redundancy	Without a load balancer, storage solutions are susceptible to downtime. This network vulnerability can bring down your solution, through no fault of your own.
Slow data recovery compromises the integrity of your solution	Supporting faster data recovery. Load balancers facilitate faster data recovery and access to archived files in the event of a failure event, protecting your application data.
Lack of high availability	Providing immediate failover. Should a server failure occur, intelligent rerouting of traffic to a secondary, server ensures an uninterrupted experience for the end user. This keeps your storage applications always-on.





2 Product Stability

Pain point?

DNS round-robin isn't good enough

How load balancers can help

Regular health checks are done on all available nodes.

There are many ways to distribute traffic across a set of servers. One such method is round-robin DNS. While round-robin DNS may seem like a simple and convenient way to distribute traffic across multiple servers, it has significant limitations that negatively impact performance and user experience. Only by using a load balancer can you ensure traffic is directed to healthy nodes, optimizing performance and preventing traffic being sent to dead or overworked nodes.





3 Performance

Pain point?

How load balancers can help

High throughput requirements

Flexible deployment methods for maximum performance.

GSLB direct-to-node deployments can be used for high read requests (pulling data from the node), as well as high write requests (putting data on the node) by removing the load balancer from the path of incoming traffic so it goes straight to the node.

Load not optimized across all storage nodes in the cluster

Optimized storage solution performance.

Even traffic distribution, scalability, reduced response times, high availability, redundancy and health monitoring, mean load balancing can offer more efficient resource utilization and superior performance.







4 Multi-site resilience

Pain point?

Poor multi-site resilience

How load balancers can help

Global Server Load Balancing (GSLB) site affinity.

With GSLB based on a configured IP topology, traffic can be preferentially directed to the fastest local data center by the load balancer. Constant monitoring allows rapid failover to other data centers in the event of site failure, ensuring file transfer integrity and seamless data access.

Need for minimum quorum of nodes at each data center

Define a minimum number of nodes per site.

Should the number of storage nodes at one site fall below the required quorum threshold, GSLB can automatically redirect traffic away from that data center to avoid request failures.





5 Scalability

Pain point?

Need for easy, scale-out deployments

How load balancers can help

Reduce the burden of scale-out.

Once you add a new node to your storage cluster you only need to add it to your real server pool for it to be active on the system. Alternatively, you could simply autoscale the cluster using the load balancer API.

Exponential growth in bandwidth requirements predicted

Meet exponential data demands.

GSLB direct-to-node can be used to facilitate unlimited scalability when required to ensure you will always have the processor power you need.





6 Visibility

Pain point?	How load balancers can help
Lack of visibility when a storage node goes down	Intelligent health checks. The load balancer has greater visibility of the surrounding network infrastructure meaning it can offer health checks that are specific to your application.
Need a single pane of glass for system wide analytics	Enhance your existing analytics. Integrate the load balancers' traffic and health monitoring with your own, using either the Prometheus exporter or the API.
Complexity of managing separate load balancers leading to customer resistance to another dedicated ADC pair	Centralized management. With Loadbalancer's portal it is possible for your customers to manage their entire ADC suite from a single location.







7 Security

Pain point?	How load balancers can help
Worried about DDoS attacks	Rate limiting for operational constraints. Rate limiting can be employed to block DDoS attacks by limiting the number of connections that can be made in a given period of time, protecting the server from being overwhelmed.
Web app security vulnerabilities	WAF for multilayer security. Built on the OWASP Core Rules Set, we can recommend specific WAF rules (depending on what you're trying to achieve), to inspect the content of each web request, identify unknown or unexpected vulnerabilities such as cryptographic failures, script injection, and vulnerable or outdated components.
Decryption is resource intensive	You could terminate your TLS/SSL connections on the load balancer. This would put the decryption burden on the load balancer. However, this implementation would need very careful consideration on a case-by-case basis.



8 Support

Pain point?	How load balancers can help
You get blamed for availability issues that aren't your fault	Take away your customers' pain. Help them solve the high availability issue so you don't get blamed for problems with their network.
Need to do manual fixes and updates to close security loopholes	The Loadbalancer ADC Portal. Consolidate all your appliances in a single dashboard to easily monitor their status and create automated workflows, allowing ADC backups and updates to be scheduled in advance.
Open source load balancers are unsupported so not commercially viable	Outsource load balancing support to the experts. Have someone else solve your customers' availability issues 24/7, so you can focus on your core product offering.



9 Commercials

Pain point?	How load balancers can help
Customers mis-sold ADCs meaning they don't play nicely with your tech	Validate your recommended ADC. Prevent deployment and maintenance issues.
The ADC you have currently can't be tailored	Choose a load balancing solution that meets your needs. Whether that be tailored tech, support, or commercials.
Customers want integrated solutions	Solve your customers' high availability issues for a higher deal success rate. Make sure you pick an ADC vendor that fits your solution.





3. Why do you need a dedicated load balancer for your storage solution?



You don't want noisy neighbors!

Multi-app approach

With your customers subject to tight cost controls they might be tempted to try and tie your storage solution to a load balancer they already use to serve other applications in their stack. While this might seem logical to the customer, this multi-application approach actually undermines the performance of your solution.

Where a multi-application load balancing approach is adopted, your storage application will lack a dedicated load balancing resource. This means it can become overloaded, compromising, and limiting, the performance of your application (aka the 'noisy neighbour' situation).

Per-app approach

It is only with a dedicated pair of load balancers that your solution can be optimized. This per-app approach prevents resources being drained by other applications, helping you realize your intended objectives.



**4. How can load balancing support
your route-to-market?**



Realize your unique business objectives

When it comes to your route-to-market, there are many different ways ADCs can increase your chances of success:

Option 1

Recommend a specific ADC vendor

This is pretty much the minimum customers now expect and (with a technically validated solution) your customers will benefit from having their high availability headaches taken care of. While you benefit from increased revenue.

Option 2

Deploy open source ADC software on your hardware and position it as your own

Yes it's free, but this one is harder to make work unless you have the resources and expertise in-house to support this yourselves as a viable commercial solution. This can be a good starting point however for storage solution providers exploring a Proof of Concept.

Option 3

Meet in the channel

By partnering with a ADC vendor, each provider is able to independently validate their joint solutions, providing detailed deployment and support documentation to their customers.

Option 4

Go full OEM

This solution offers the most mid- and long-term benefits to the storage provider, facilitating seamless integration, a single solution for the end-user, and the greatest commercial and technical flexibility.



**5. How do you pick the right
ADC vendor?**



Make sure they have the right tools

Pain point?	How certain ADC vendors can help
When network throughput is paramount	GSLB direct-to-node. Addresses the need for high throughput, while retaining active health checking of storage nodes and services. Works best with a large number of nodes.
Intensive read workloads	Layer 4 DR. Requests go through the load balancer, while replies go directly from the storage nodes to the requester.
Need for flexibility and simplicity	Layer 7 SNAT. Here the load balancer acts as a reverse proxy and allows much greater control of the connection, where required. For example, you can perform header modifications and intelligent direction decisions.
Overloaded nodes giving slow responses	Feedback agent. The Server Feedback Agent combines a number of metrics such as CPU and RAM to calculate the availability of resources left on a real server. This is then reported back to the load balancer to determine where the next incoming connection should go, eliminating any hot node problems.
Desire for complex application health monitoring	External dynamic weight monitor. This customizable health check functionality can be used to monitor the load on a node in real time (for example from your own API) to confirm multiple parts of an application are working correctly. The weights and health of the servers on the load balancer are adapted dynamically based on the result.



Make sure they have the right approach

Regardless of your engagement strategy, finding the right ADC partner will be key to achieving your desired outcomes. Storage vendors are not created equal. And neither are ADC vendors!

Depending on your unique objectives, here are some topics you might want to grill them on:

**Tailoring
ability**

**Seamless
integration**

**Storage
expertise**

**Centralized
management/
visibility**

Ease of use

Product support

**Roadmap
alignment**

Pricing

**Licensing
options/
renewals**



6. What does Loadbalancer.org offer?



Optimized storage deployments

Tailoring

- Our solutions are tailored not only to your needs, but also to those of your user base.
- Adjustments are made to tried and tested technologies, reducing your risk and accelerating delivery.
- This extends to white labelling and other bespoke branding, commercials, and flexible licensing.

Product roadmap alignment

- Supporting your go-to-market strategy.

Vendor-agnostic centralized management platform

- For automated and scheduled updates.

Support for your existing open source/commercial estate

- If you work with us then we can support your existing customer estate (whether open source or commercial) and help with the transition phase, to ensure minimal downtime.

Clever not complex

- Our solutions are focused on being clever enough for the solution, but not so complicated that they're a pain to manage and maintain.

Ease of use

- We offer a simplified WebUI for ease of use and stripping of redundant functionality.
- Updates are super simple to install/
- Detailed documentation, templating and dedicated support are all included.



How we've helped other storage providers

Here are some example solutions we've implemented for other storage providers...

Full OEM integration

*Global Server Load
Balancing (GSLB)
direct-to-node*

*Global Server Load
Balancing (GSLB) with
extended DNS client
subnet*

*Traffic rate limiting for
Denial of Service (DDoS)
attack mitigation*

*A Feedback Agent
check to ensure even
load on the nodes in
the storage cluster*

Ask our Sales team for further details, or check out this [case study](#) to discover how Loadbalancer created a tailored load balancer for Cloudian to take their object storage solutions to the next level.



7. Thanks, but no thanks...



I don't need to get involved



"I already recommend a free, open source ADC..."



This will be unsupported, and is unlikely to adequately serve your solution.



"My customers already have their own ADCs they can use..."



Storage requires a dedicated ADC solution to avoid a 'noisy neighbor' scenario.



"My customers can choose their own ADC..."



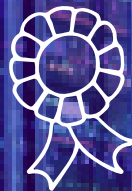
Their ADCs won't be validated with your technology and the customer will blame you if it goes wrong!



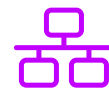
Thanks, but no thanks...

Storage

I already have
a preferred
ADC vendor



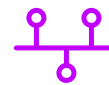
Can they provide you with the metrics and usage intel you need?



Can they provide multi-site resilience/GSLB?



Can they tailor their offering?



Can they align their product roadmap to yours?



Can they support your go-to-market strategy?



8. What about other ADC vendors?



Your Loadbalancer.org alternatives

Free open source

- Can be a great solution if you commit enough resource to understanding the technical issues.
- No built-in failover or multi-site capabilities.
- An unsupported solution which means you will need to have the skills and capacity in-house to do so.

Mid-range commercial solutions

- You would be subject to their product roadmap changes which can be incredibly disruptive.
- They are unable to provide vendor-agnostic visibility of your entire load balancing suite.
- Licensing limitations can cause issues and lock you in.

Market leaders

- Great if you need bells and whistles, but requires specialist skills for deployment and maintenance.
- The more features, the bigger the attack surface, potential security vulnerabilities, and possibility of human error.
- The cost of these solutions can undermine your own margins.



Summary

We offer more tailoring opportunities than any other ADC on the market.

This means we build our solution around yours, putting your unique needs front and center, to give you:

1. Optimized storage architecture.
2. Maximum commercial returns.
3. An enhanced solution that serves more of your customers' needs.



About the company

Our mission is to ensure your business is never interrupted by downtime — using tailored, high availability solutions to optimize application delivery.

Bringing decades of experience to your deployment, we're here to get to the heart of what matters to you, delivering uptime you measure in years, not months.

Find out if our clever, not complex, Application Delivery Controllers (ADCs) and exceptional, personalized support are the right fit for your application stack.

www.loadbalancer.org



SMART • FLEXIBLE • UNBREAKABLE

