

Everything You Need To Know About CDN Load Balancing

One Size Fits All? Not Really

By definition, a **Content Delivery Network** (CDN) is:

an interconnected system of computers on the Internet that provides web content rapidly to numerous users by duplicating the content on multiple servers and directing the content to users based on proximity.

Companies have learned over the years that relying on one of anything can be problematic and CDNs are no exception. Since 2007, it's estimated that network failures among the dozen or so largest providers have cost businesses close to **\$75 million USD**. You should also note that's just from a handful of providers and doesn't figure in "soft" costs like the damage done to customer relationships and the company's reputation. The most recent high-profile outage (Amazon Web Services during Christmas 2012) was due to a failure of Amazon's load balancing software, but the reasons for outages range all the way from incorrect software upgrades to lightning strikes.

For a midsize company with far fewer content requirements, it might seem like overkill to distribute cloud services but no company is more vulnerable to outages than the midsize company. When the network goes down, business comes to a standstill, revenue tanks, and customer goodwill evaporates. You may think that one CDN may be sufficient for your business, but as the points below enumerate, the advantages of load balancing between several CDNs can't be denied. Thanks to **managed DNS companies**, the ability to load balance between multiple CDNs is not only readily available, but affordable for mid-sized enterprises.

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The Benefits Of Load Balancing

Proximity-based Delivery

As the above definition mentioned, the CDN distributes and delivers web content based largely on proximity. But what if the CDN itself has weak presence in a geographic area, and all of a sudden, demand accelerates from a geographical area in which the CDN is weak?

For example, if an athletic shoe company introduces a model endorsed by Chinese-American NBA star **Jeremy Lin**, they just might experience a huge uptick in volume from China (huge would be an understatement). If their CDN is not equipped to handle it and their Chinese website crashes, by the time it's back up, Lin may have sustained a season-ending injury and killed demand. It could mean millions of dollars in lost sales, creation of ill will between the company and its consumers, and executive heads rolling faster than those of the wives of Henry VIII. With the right load balancing provider, the company could have distributed its CDN needs by geography, relying on an Asian service to handle its Asian traffic.

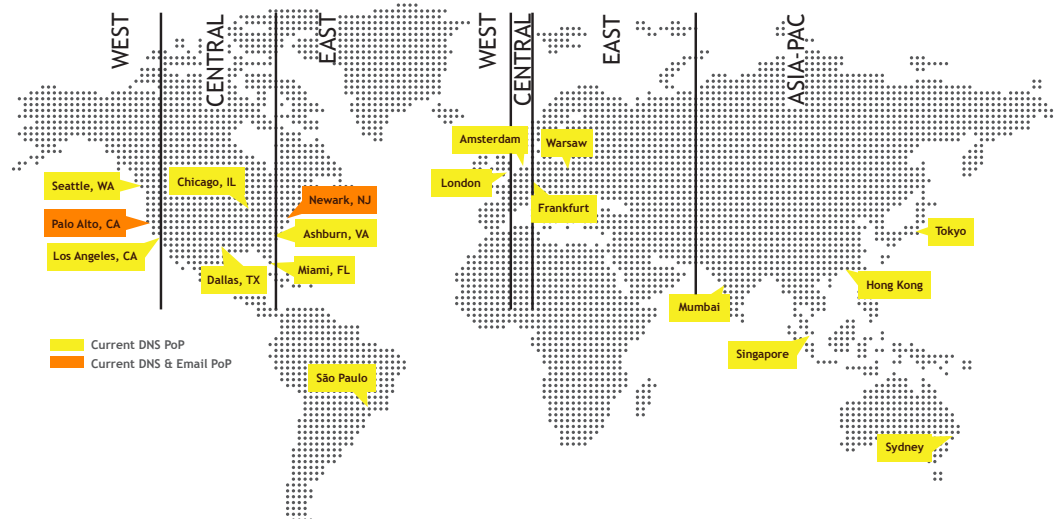
Increased Redundancy

As numerous companies have discovered, when you rely on a single content provider or delivery system, one malfunction in that provider's load balancing system can shut down your entire operation. However, if the work is distributed among several CDNs, the chance of a total network outage is virtually non-existent. Load balancing that spans CDN providers offers the highest level of redundancy and backup capability possible; that means security and safety.

Time Zone Balancing

With a load balancing solution that spans several CDNs, performance can be optimized based on time of day. Peak demand in one time zone may be the middle of the night in another like a company with peak traffic at noon in LA load

Dyn's Anycast Network and Regions



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balancing to a server in India. With time zone based load balancing, a company's website can always be utilizing servers' off hours, and thus avoid slow response times and Internet bottlenecks. Nothing causes consumer dissatisfaction and discourages repeat website visits like slow performance.

Cost

Utilizing a multi-CDN distribution model can also have economic benefits. Companies can pick and choose from providers to find the one that offers the most cost effective solution for particular markets. Additionally, they are not at the mercy of a single provider. Imagine if you, as a consumer, could use multiple cable or satellite providers for your home television. The companies would be forced to compete for sports, entertainment, documentaries, and news programming, and the consumer would be able to pick and choose. For midsized businesses, the cost difference can be critical.

Performance

Like cost efficiency, companies also have the option of choosing which CDNs offer the top performance in a variety of areas. Again, the TV analogy applies. Cable provider X may have the latest and greatest 3D movie capacity, while satellite provider Y might have the most high definition programming offerings. Wouldn't a la carte television be nice?

Scalability

The flexibility presented by using multiple CDNs also means greater scalability. Sudden exponential increases in web content demand can be met by distributing the load for optimal load balancing rather than relying on one provider's capability to quickly ramp up. When demand suddenly multiplies, it presents the opportunity for a business to thrive. If there is a system failure, it can cause an implosion.

Security

The ability to shut down content delivery from one CDN and plug in another cannot be underestimated from a security standpoint. While not necessarily a panacea, localizing security breaches to the greatest extent possible can be a life saver from a company that experiences a breach, hacker attack, virus, bug, etc. The same would hold true for redundant backup capabilities. By not relying on a single CDN, your backup capabilities can expand exponentially.

CNBC.com used
Dyn to load balance
across multiple
global CDNs.

[Learn How »](#)

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Overall Optimization

This is the most important point of all. Whether a company is concerned with performance, scalability, security, geography, cost or any other factor, employing a load balancing tool that spans across multiple CDNs is a way to optimize a company's web delivery. Optimal means the best possible and the best possible web content delivery to your customers/audience means the best chance for your company to succeed, grow, and prosper.

The Moral Of The Story

Not all enterprises utilize CDNs. Those that do demand higher levels of performance, scalability and hassle-free service. With today's consumers being faced with more choices than ever, the ability to deliver a fast and efficient web experience is becoming more and more critical to a company's success and, perhaps, even its survival. This is what CDNs provide. Relying on a single CDN has been commonplace and whenever vital Internet capabilities are in the hands of one provider, the risks increase.

Internet performance optimization, whether in ecommerce, intra-corporation web services, social networking, collaboration and/or however else the Internet is utilized, is an absolutely vital component in the success of today's enterprise. While the consumer is not interested in the technological reasons why one company's website is more efficient, faster, and more enjoyable to visit than its competitors, his or her web experience will determine which of the vast array of competitors he or she will order from, post on, collaborate with, etc. The business user, likewise, will base his or her evaluation of the work environment largely on the performance of the network.

 **Want to optimize your website? Give us a call.**