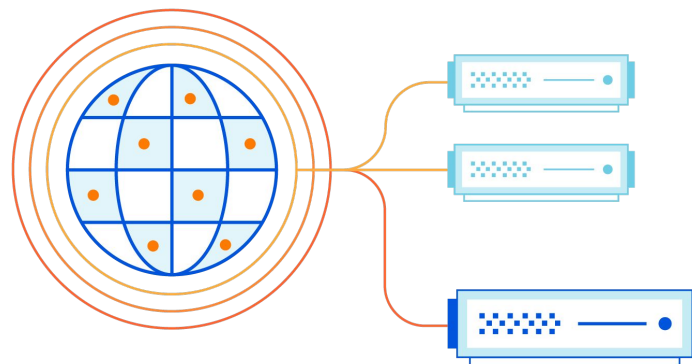# Cloudflare Load Balancing Local Traffic Manager (LTM)

Maximize Application Availability and Performance

The Need for Effective Load Balancing

Effectively serving millions of concurrent users is crucial for the success of any modern online business. However, slow or unavailable applications can negatively impact business outcomes. Many enterprises lose millions of dollars every year due to website sluggishness and downtime, caused by numerous factors including unhealthy servers, geographic distance between end users and servers, slow DNS resolution times, cyber attacks, and more.

Load balancers mitigate these performance and availability problems by uniformly dispersing web traffic across a network of servers, ensuring that no single server can be overwhelmed and become a bottleneck.

Traditionally, enterprises have relied on hardware load balancing appliances, deployed within data centers to perform local traffic management (LTM), steering traffic away from unhealthy servers, ensuring high availability and optimal performance.

Limitations of Legacy Load Balancers

While hardware appliances can be very expensive to acquire in the first place, sophisticated, modern cyber attacks, including DDoS attacks, as well as unexpected traffic spikes can easily overwhelm them and render them useless. Scaling these appliances to meet the ever-increasing demands of modern businesses can also prove to be expensive as these devices go through regular hardware refresh cycles, physical upgrades for capacity and feature addition, and downtimes caused by these maintenance windows.

This is where cloud-based load balancing solutions can help. However, while most traditional cloud-based solution providers provide load balancing and redundancy between servers deployed within their own infrastructure, or between public, internet-connected sites, they generally lack the ability to work in complex multi-vendor, multi-cloud environments.

This forces enterprises into an impossible choice:

1. Keep investing in inflexible, hardware load balancers to maintain high availability and performance for the existing application infrastructure
2. Uproot and move existing applications to a cloud-based platform, where they will be subjected to unnecessary vendor lock-in, or
3. Maintain a hybrid load balancing deployment with complex and disparate multi-vendor load balancers deployed wherever the applications (or servers) reside.

Cloudflare Local Traffic Manager

Cloudflare Load Balancing helps enterprises drive down latency and downtime and decreases their impacts on business outcomes. Cloudflare LTM allows customers to distribute traffic across their servers, whether they're on-premises or in the cloud, reducing server strain and latency, and improving user experience.

With Cloudflare LTM, customers can benefit from:

Flexible local traffic management
- With private IP support, Cloudflare provides near real-time failover across multiple servers, whether they are deployed in a private, public or hybrid cloud.
- Cloudflare LTM load balances traffic across multiple L4-7 protocols, including HTTP(S), TCP or UDP.

Unparalleled performance and scalability
- With virtually unlimited scalability, applications are protected against massive cyber attacks and unexpected traffic surges.
- Features like SSL Offload and Session Affinity can further optimize and enhance performance of origin servers.

Unified of application delivery and security
- Cloudflare LTM not only integrates with our global CDN, but also provides seamless integration with application security solutions like WAF, Bot Management, integrated DDoS protection, API protection, and more, ensuring security incidents are identified and mitigated quickly.
- With Zero Trust and tunnels support, customers can rest assured their private data will remain protected against infiltrations and threats enroute to their servers.

Ease of configuration and management
- All Cloudflare solutions, including LTM, can be configured and set up in minutes, requiring minimal management. Our unified graphical UI and powerful APIs makes the solution easily reconfigurable to support evolving business needs.
- Cloudflare provides at least a 10X faster time to value compared to appliance vendors, even once the hardware is delivered and in place.
- Cloudflare also enables customers to create custom rules, advanced health checks, and health monitors with ease.

Predictable, transparent and flexible pricing
- Cloudflare enables efficient growth, ensuring customers only pay for the resources they need, instead of paying high hardware costs upfront that may not be fully utilized.
- We also reduce dependence on professional services, saving valuable engineering hours spent on configuration and management so customers can focus on their highest-priority initiatives while maximizing savings.