

WHITE PAPER

Multi-CDN:

6 cases when this strategy benefits enterprises

Competing in the global market, enterprises need 100% availability and consistent performance of their web services. Multi-CDN strategy helps to achieve this goal — it allows the use of several CDN providers simultaneously and routes each region's traffic to a CDN with the best performance. Let's look at how this approach works, and the different ways it benefits large-scale online businesses.

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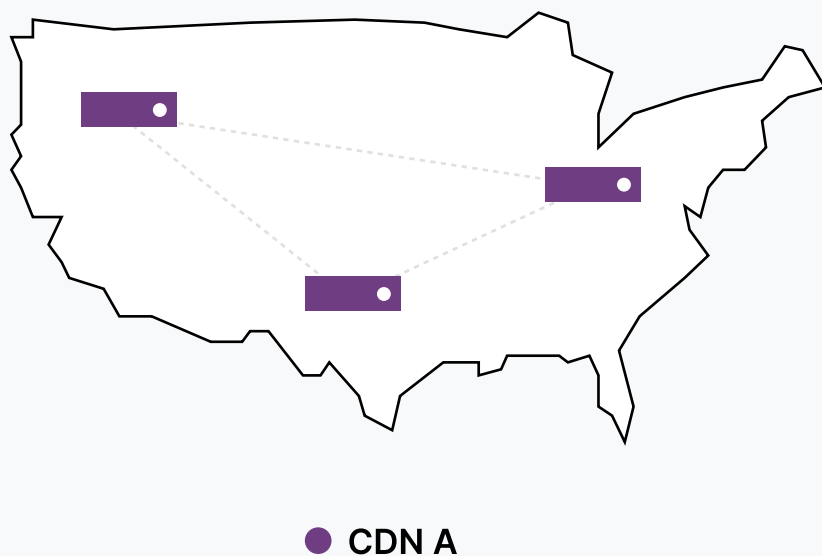
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| What is Multi-CDN?

A CDN (Content Delivery Network) is a network of geographically distributed cache servers that deliver site and app content. This technology benefits global large-scale businesses, whose customers are located worldwide. A CDN provides equally high performance for all users regardless of their distance to the server where the site or app is hosted.

Multi-CDN is a combination of several CDNs from different providers. You split traffic between providers' networks: some users receive content from one CDN, and other users from another. You can use two providers simultaneously or keep one of them as a spare option, if or when the main provider experiences outages.

Single CDN



Multi-CDN

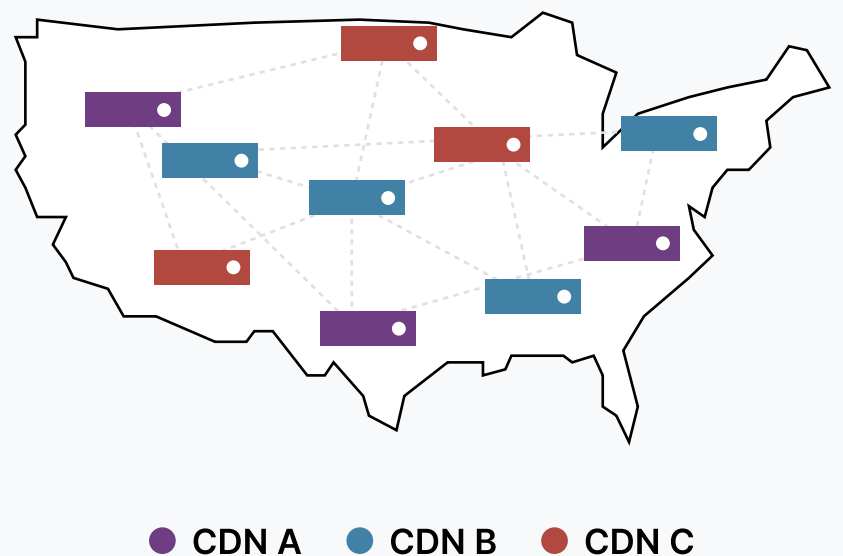


Figure 1

Multi-CDN uses a balancer tool to define which CDN should deliver content to a specific group of users. It analyzes two types of data:

- **Real user metrics (RUM).** These are based on millions of users' interactions with a website and helps to determine which CDN delivers content with the lowest latency to a specific location at any point of time.

- **Synthetic uptime data.** Extracted from detailed checks of every provider, this data helps determine whether some nodes (CDN cache servers) experience timeouts and latency.

After data processing, the balancing tool decides how to split customers' requests among CDN providers. Then the tool gives DNS providers the command to route the traffic.

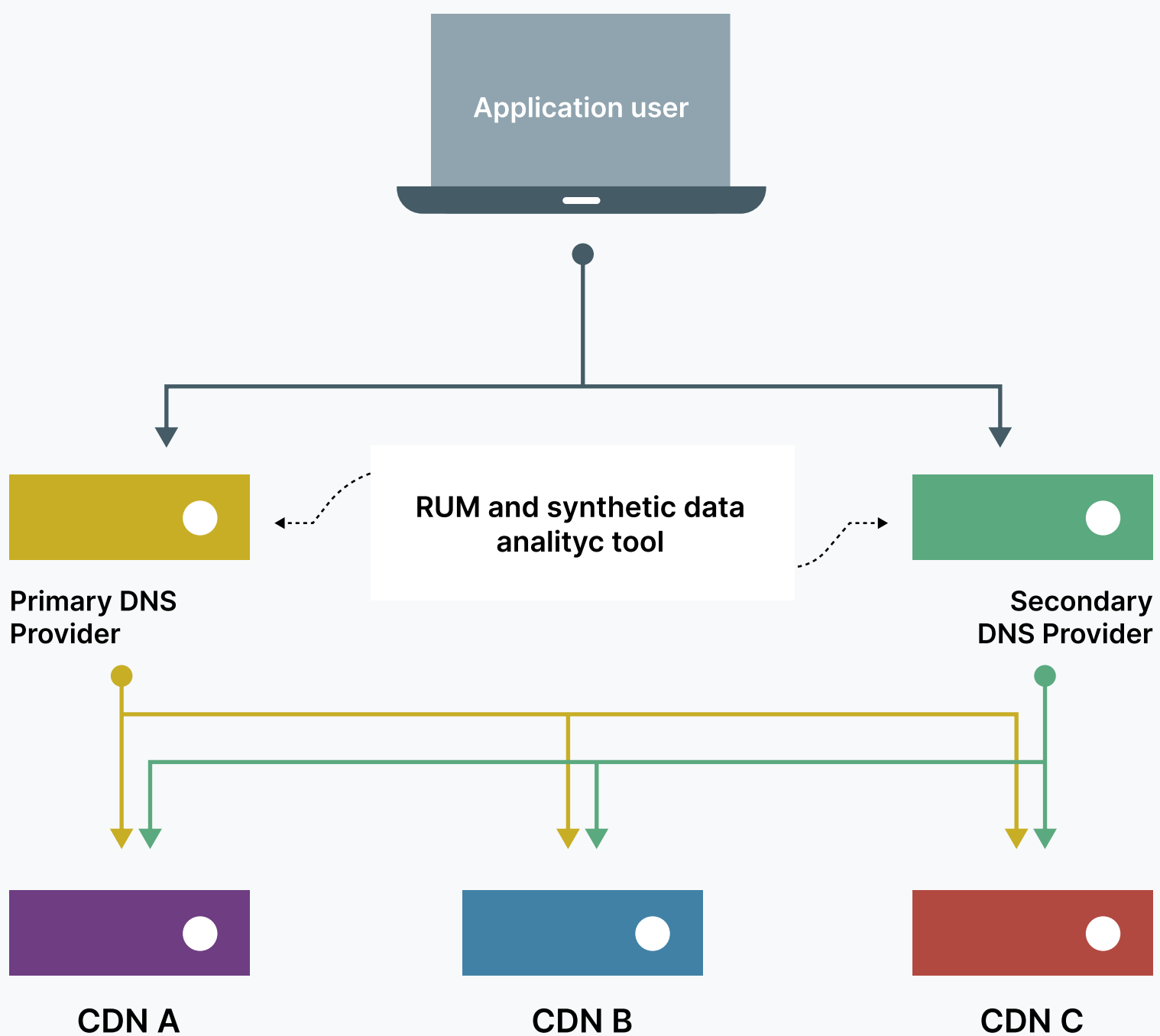


Figure 2

How Multi-CDN helps global businesses

1. Improve your site or app performance

CHALLENGE

CDN provider performance varies from one region to another. It is caused by differences in the network quality of regional ISPs that the CDN collaborates with. When using only one provider, your site or app performance is entirely dependent on it and performance may vary in different locations.

SOLUTION

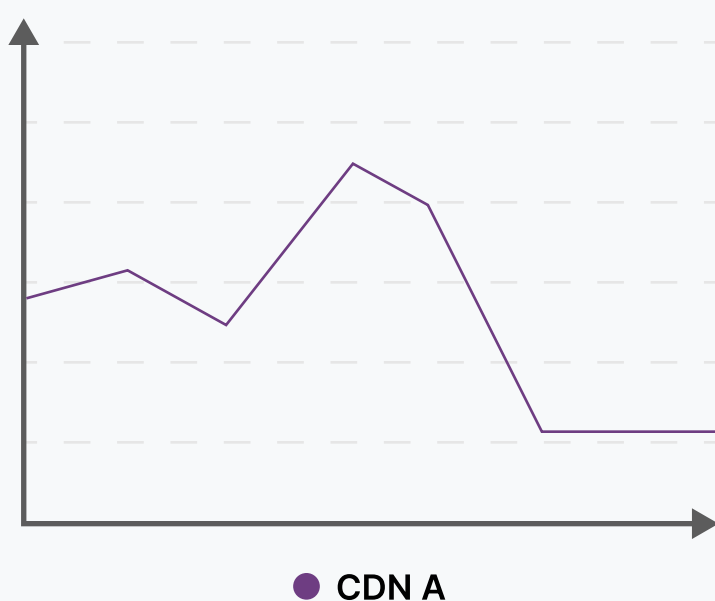
Multi-CDN allows using different CDN providers in different regions. In a specific location, the balancer tool directs traffic to the provider which gives end-users the lowest latency. You have the best available performances in all regions.

EXAMPLE

A global online store used one CDN. The provider demonstrated a good performance level in all regions except one. In this region, customers constantly complained about slow loading, which resulted in a high bounce rate and low conversion.

To solve the problem, the online store moved to the Multi-CDN strategy. The store connected a CDN provider with excellent performance in the desired region. Once the traffic from this region was balanced to the new CDN, users finally got a fast load speed. Former complaints disappeared and conversion rates increased.

Single CDN



Multi-CDN

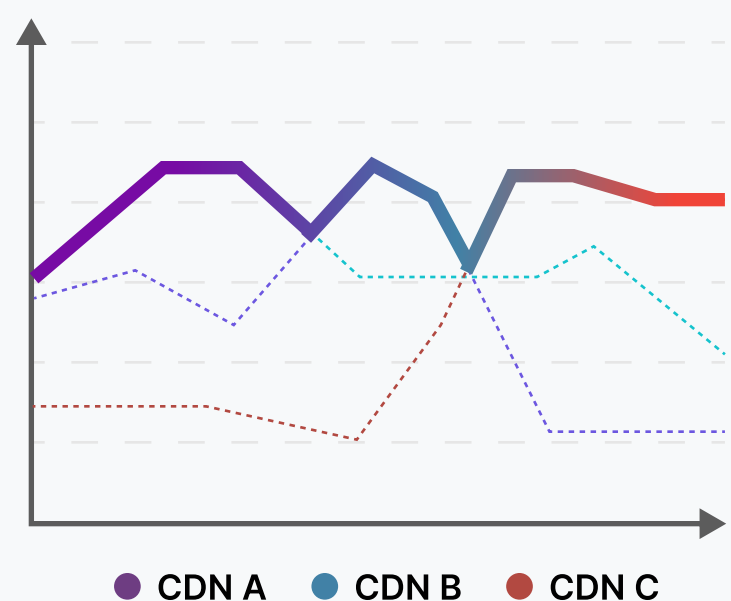


Figure 3

2. Use features from different CDNs

CHALLENGE

Businesses may have specific tasks that require additional CDN functionality beyond fast delivery. If your CDN provider doesn't have a certain feature you may lose potential clients.

SOLUTION

The Multi-CDN strategy allows you to satisfy business demands requiring a specific feature. If at least one CDN provider supports the desired functionality, in most cases you can scale it across your entire business.

EXAMPLE

An e-commerce marketplace needed to decrease the site page load speed. The site contains many product images, so the marketplace decided to deliver pictures using a compressed format, but one with no visible loss of quality. WebP compression was suitable for this goal. Unfortunately, the CDN provider company used didn't have this feature.

The marketplace moved to the Multi-CDN approach. It connected an additional provider with the WebP compression feature. Now, all images are delivered over the second CDN, while other content delivery continues over the first. As a result, the marketplace got image delivery accelerated and kept the habitual infrastructure of the first CDN provider.

Single CDN



Multi-CDN

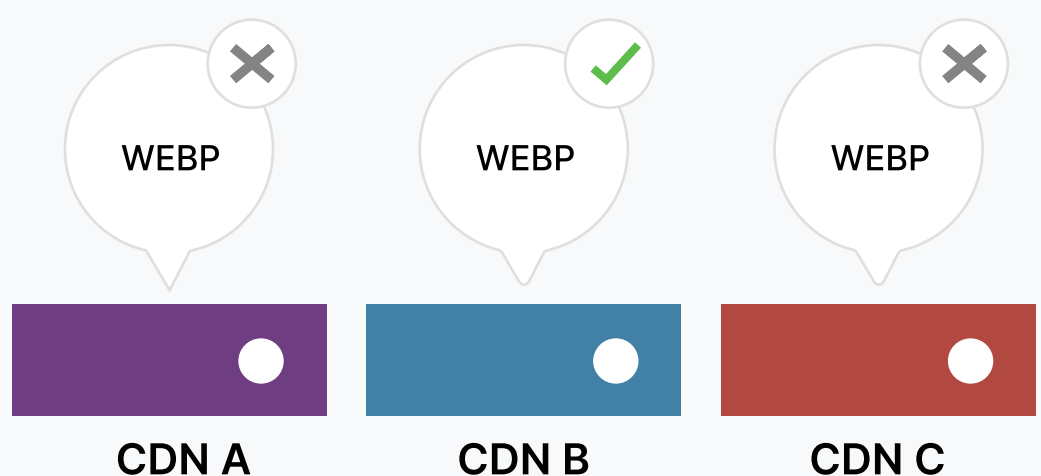


Figure 4

3. Expand coverage without risks

CHALLENGE

When entering a new market, it's essential to provide new users with good service performance. However, your CDN provider may have poor coverage in the desired region. In this case, new users will face high latency and the first impression of the product will be ruined. To avoid this you can change the CDN provider — but doing so carries a risk: if the new provider lets you down, the investments in the new partnership will be wasted.

SOLUTION

Multi-CDN allows you to expand your network coverage gradually. You can add new PoPs (Points of Presence) from CDNs of different providers without risky movements.

EXAMPLE

A cloud gaming vendor focused their business on European and Asian markets. They had a long-term partnership with a reliable and cost-effective CDN provider which worked in these regions.

The company decided to expand into the U.S. market, but the current provider had poor coverage in this country. However, it was not a problem: the vendor moved to a Multi-CDN solution. The company expanded its infrastructure by connecting a new CDN provider with an outstanding performance record in the U.S. As a result, the new market was entered without affecting the presence in Europe and Asia.

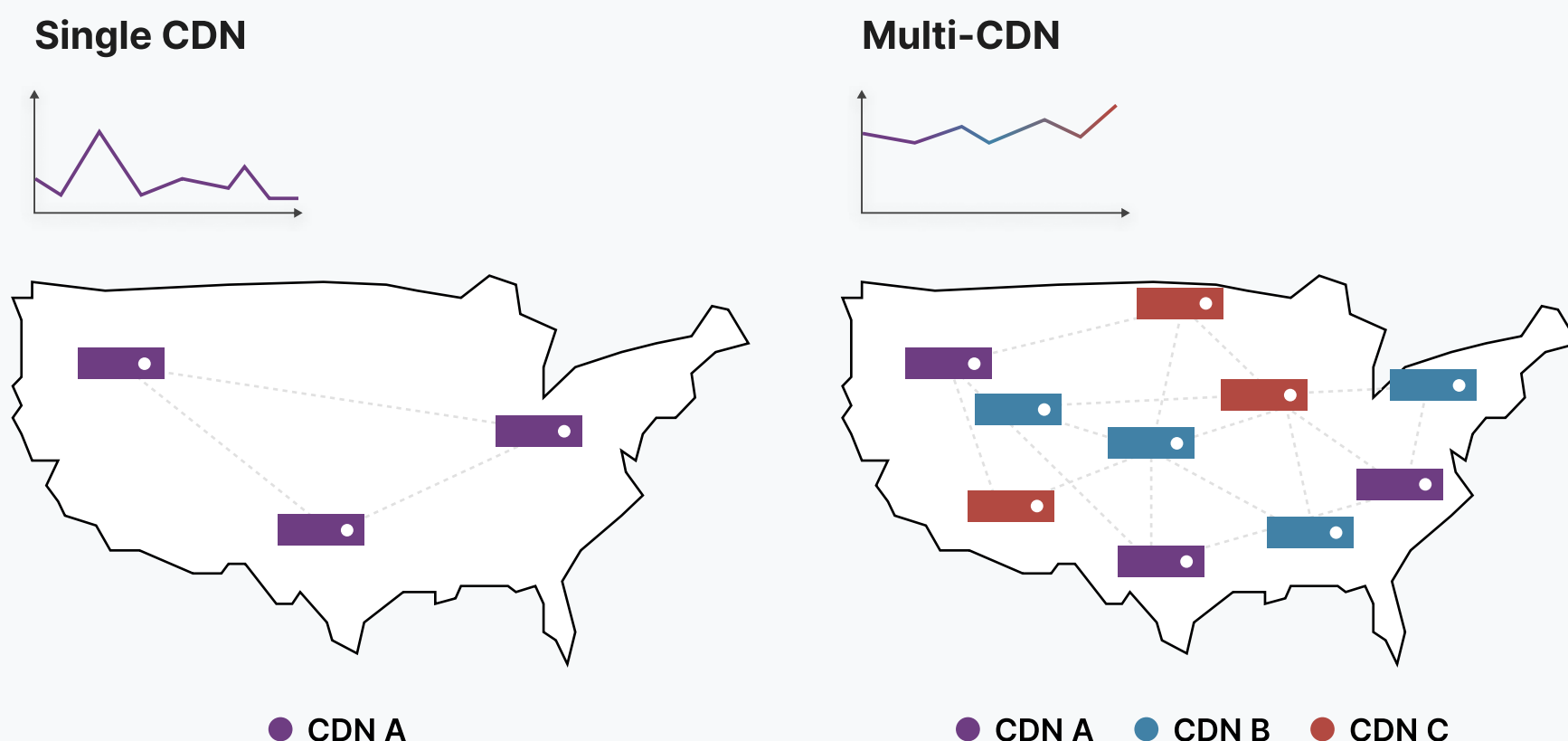


Figure 5

4. Lower costs

CHALLENGE

CDN provider service prices vary in different regions. You may have affordable prices in some regions and expensive ones in others. When using one provider you have to accept the fact that you overpay for part of the traffic.

SOLUTION

With Multi-CDN you can combine different CDNs and route traffic to the CDN that provides the lowest cost in a specific region.

EXAMPLE

A company worked with a CDN provider that had PoPs in Europe, America, and Asia. In general, the prices weren't high, but traffic in Asia was expensive. To reduce costs, the company employed the Multi-CDN solution: connecting an additional provider with a cheaper price in Asia. The company routed a significant part of the traffic in the region to the new CDN, thereby decreasing total costs.

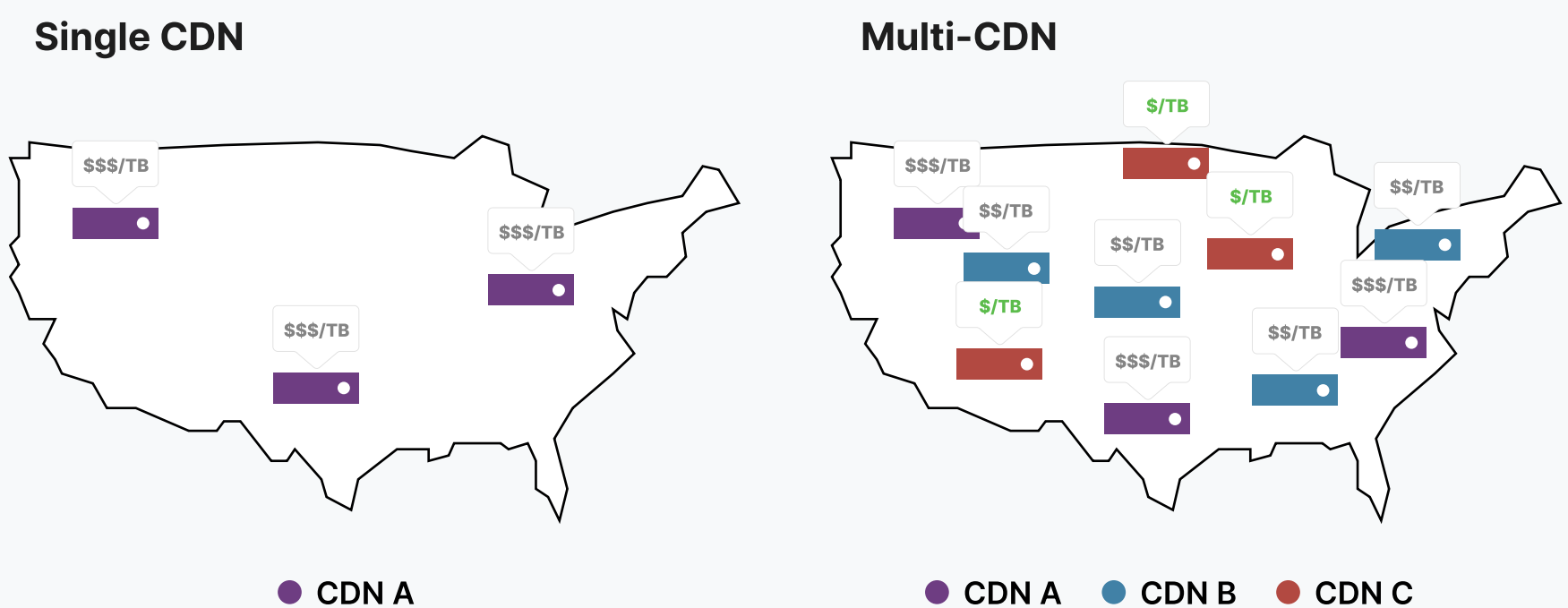


Figure 6

5. Get better service terms

CHALLENGE

The longer you work with only one CDN provider, the more you depend on its terms. If they change for the worse you face a hard choice: to accept it and pay more, or to quit and ruin your established working process.

SOLUTION

With Multi-CDN, you have a portfolio of different CDN providers. You can decide how much traffic to allocate for each of them. When providers know that you have a range of vendors they will compete for traffic (and revenue) by offering better terms.

EXAMPLE

A CDN provider decided to start charging for its technical support. The majority of the clients were forced to agree to these terms — they didn't want to change providers because it would affect their working processes.

However, one global company avoided extra expenses by using Multi-CDN with several providers. The CDN provider took note: if technical support became paid for this client, they may break the partnership. For a company with several providers in its portfolio, it's more profitable to refuse an expensive provider and give that traffic to a cheaper one. So, the CDN decided to keep free support for this particular client to retain the important partnership.

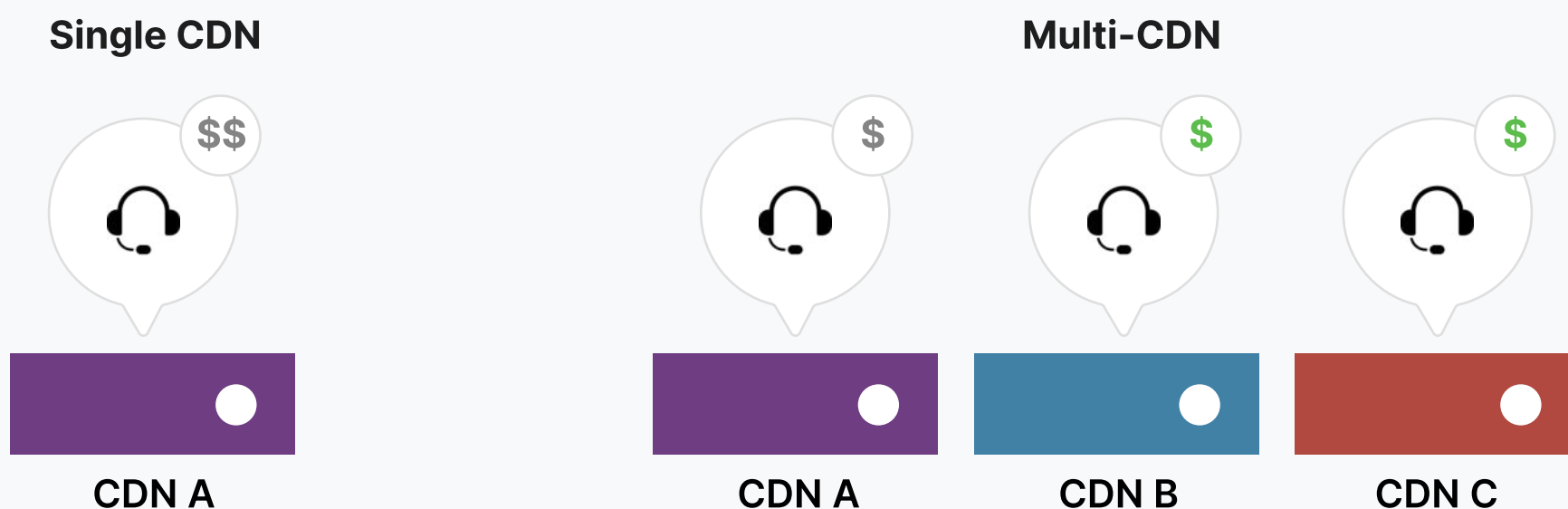


Figure 7

6. Maintain accessibility even when a CDN experiences outages

CHALLENGE

If a CDN provider experiences problems on the network in a region, end-users located in or close to this region face a decreased performance of the service.

SOLUTION

With the Multi-CDN strategy, you have redundant CDNs. If the main one experiences outages in a region, the redundant CDN comes into play — it temporarily substitutes for the main one and delivers traffic instead. End-users continue to get a good experience using your services.

EXAMPLE

A streaming service broadcasts a football match over two CDN providers. The first CDN is the main one and delivers 80% of traffic, and the second one is redundant — it serves 20%.

In the middle of the game, the first CDN performance in Europe decreased; its European ISP had unexpected network issues. If the streaming service used only this CDN, for users in Europe the broadcasting would be ruined — they would have high latencies and intermittent playback. Fortunately, the service had Multi-CDN. Traffic from the region was just routed to the second CDN, which remained safe and sound. Switching was made quickly and seamlessly because cache servers on the second CDN had been “warmed up” by processing 20% of the traffic. As a result, all users finished watching the match without any issues.

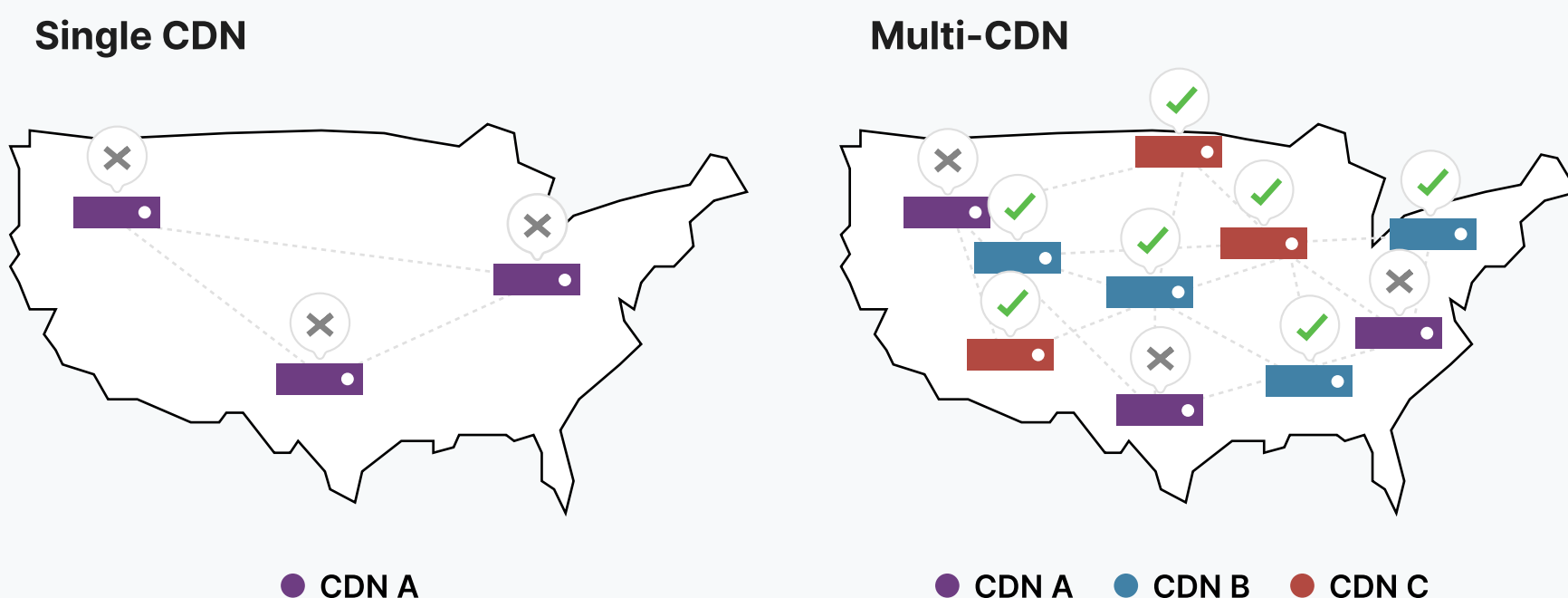


Figure 8

| Conclusion

The multi-CDN strategy can help you to:

- Improve site or app performance
- Use features of different CDNs
- Expand coverage without risks
- Lower costs on content delivery
- Get better service terms from CDN providers
- Maintain accessibility even when one of your CDN providersexperiences outages.

This strategy is best suited for enterprises and global companies with a worldwide audience and high rate of traffic. Each of the advantages presented above increases its value on a large scale and in the long term.

Multi-CDN will work well if you have good CDN providers connected. Here are some aspects we advise you to consider when selecting providers for your portfolio:

- Number of PoPs in the locations you need
- Traffic price rates in the regions where you want to deliver content
- Additional features which can enhance your product propositions
- Support and engineering teams' responsiveness to immediately solve technical issues.

New vendors, products, and solutions are constantly emerging on the market. Don't be afraid to test and experiment with new providers — doing so will help you to build sustainable infrastructure, which is the basis for successful global business.

Gcore CDN is a next-generation content delivery network that helps you accelerate the dynamic and static content of your websites or applications. Our CDN has many built-in web security features and operates through a rapidly growing infrastructure with over 140 points of presence worldwide.

About Gcore

Gcore is an international leader in public cloud and edge computing, content delivery, hosting, and security solutions.

We manage a global infrastructure designed to provide enterprise-level businesses with first-class edge and cloud-based services.

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