



State of gaming

Executive Summary

CacheFly pioneered the use of TCP AnyCast in 2002, the infrastructure upon which CDNs are still building. In March 2005, Cache-Networks launched. By 2007 we were ten global POPs, becoming number 1 in podcasting, and nearly doubling in size over the next two years. In 2012 we began deploying multi-CDN instances, increasing performance by over 50%. Now we are over 50 global POPs, with 4,000 customers in over 80 countries outperforming top CDNs by up to 30%.

Asia, North America & Europe rule the gaming roost with over \$130 billion in-game revenue combined in 2019. With numbers like that, latency can cost gaming companies millions.

For other regions, especially LATAM, increasing market penetration and data speed could mean a larger piece of the pie – the global gaming market is predicted to grow by nearly 20% in 2020. Whether looking to grow, protect, or diversify, CacheFly is the logical choice to deploy gaming assets in the global market. As the CDN with the best global throughput, we have you covered wherever your customers are.

The State of Gaming

More people than ever are gaming. With the dawn of mobile gaming, nearly everyone carries a gaming device with them every day. Over 50% of those who play games consider themselves casual gamers, explaining the abundance and popularity of casual games such as Angry Birds and Candy Crush. Men are more likely to use gaming consoles and PCs than women, while women use mobile phones more than men. The younger demographic massively prefer mobile gaming to console/PC games. Gamers across all ages and nations are increasing playtime to varying degrees. An increasing number of players hope to one day make gaming a career, leading to a rise in gaming viewership as gamers are watching fewer sports broadcasts, especially amongst younger gamers. Gamers overwhelmingly prefer to download games versus playing in the cloud, meaning the demand for download bandwidth is higher than ever in the gaming industry. Since slow download speeds are the number one cause of frustration for gamers, it's essential to prepare for increased demand in 2020.

Overall, gaming playtime has increased 19% in the last year, bringing average gameplay up to just over 7 hours a week. When broken into chunks, on average, gamers play for over an hour and 15 minutes each time they play. Mobile phones have become the most common device for playing games, outperforming both PC and consoles. Slow download speeds are a primary pain point amongst gamers; over 85% of players say download speeds frustrate them.

Fast Facts

- Gamers cite fast performance as the most crucial factor when playing a game.
- Downloads remain the most popular method for acquiring games, with 64% of gamers preferring this method. This number continues to grow year over year.
- Gamers are increasingly more interested in watching others play games. However, sports remain more popular for viewing among gamers. If the current trajectory continues, game streaming may outpace sports broadcasts within the next five years amongst players
- More than 50% of gamers state they would not continue to play games on a platform that had experienced a data breach.
- Downloads remain the most popular method for acquiring games, with 64% of gamers preferring this method. This number continues to grow yearly.
- Amongst the young adult crowd, those 18-25, Battle Royale and First Person Shooters are the most common game type. However, overall, casual single-player games are most popular.

Solutions To Your Delivery Problems

Poor Cache Hit Ratio

CacheFly has an industry leading Cache Hit Ratio due to our state of the art infrastructure. We can evaluate the cost of a miss and evaluate the cache byte ratio to lower the performance penalty for cache misses. To get to 100% we offer 100% Cache Shield.

Slow Download Speeds

With industry leading throughput speeds we deliver downloads lightning fast no matter where your customers are. We offer unique customizations to prioritize your content based on your set parameters.

Streaming Lag

Lag is one of the most frustrating issues for any gamer. With CacheFly's low latency and fast ping times we're already ahead of the game. We offer unique TCP optimizations, a carefully crafted network footprint and peering relationships - paired with dedicated capacity to avoid any noticeable latency.

Scaling For a Live Event

With our robust network and extensive storage space we can build out a custom system to support your live events with plenty of scalability should your event gain momentum.

Slow Startup Times on Mobile

With our TLS edge termination service we decrease startup times by 70%, and give you more control of your routes. When paired with dedicated capacity- we kick-start your games and content close to the edge at lightning speed.

Slow Loading User Generated Content

With Cache Shield you choose how much of your content stays cached, eliminating interference from any "noisy neighbors". For the best results 100% Cache Shield will keep all your users content warm and ready to go when needed.

Unpredictable High Latency For Game Engine

We're hyper focused on throughput, ensuring consistency of experience to improve QoS targets. We offer dedicated capacity per customer and plan ahead for scalability regardless of the demand.

Key Markets

EMEA

Like North America, Europe is a mature Internet market with functional connectivity and relatively low bandwidth and infrastructure costs. This makes it a prime target for gaming expansion, especially as more European gaming companies gain funding. The hike in European wages has also helped the gaming industry expand quickly in the region. Northern and Western Europe have the best internet penetration rates on the globe sitting at 95% and 92%, respectively. They have a mixed market between mobile, PC and console gaming, all 3 of which are expanding, mobile slightly faster than the others. While political turmoil remains a threat to the industry, it is still expected to expand substantially over the next 5 years.

CacheFly has PoPs in Amsterdam, Bucharest, Doha, Dubai, Frankfurt, Helsinki, Istanbul, Johannesburg, Lisbon, London, Madrid, Milan, Moscow, Paris, Prague, Stockholm, Tel Aviv, Vienna, Warsaw, and Zurich. We can serve your games all over Europe and the Middle East with low latency and powerful throughput.

North America

The United States was predicted to become the world's top gaming market in 2019 but missed the mark by close to a billion. China topped the list at 36 billion with the US close behind at 35 billion. Paired with Canada's nearly 3 billion in gaming revenue North America is a battleground for the gaming industry. Here as well, mobile gaming makes up more than half of all gaming revenue. The North American market is full of titans of the gaming industry. The North America digital gaming market is driven primarily by a rise of affordability, followed by an increase in penetration rate, which is now sitting at 88% with most of the unserved population living in remote areas. North America sports a favorable environment for technology enlargement, with an increasing number of mobile users, increasing technological advancement, growing youth & government policies, and increased disposable income.

CacheFly has POPs in Atlanta, Chicago, Dallas, Denver, Los Angeles, Miami, Montreal, New York, San Jose, Seattle, Toronto, and Washington, giving us the fastest throughput while we consistently perform in the top 5 in North America in latency.

LATAM

Since Latin American governments have become more open to gaming and recognized the industry as a driver of growth and profit, the South American continent is predicted to be a significant emerging game market. Brazil and Argentina lead the pack. Revenue was over a billion in Brazil and close to half a billion in Argentina in 2019. Both markets are expected to grow by close to 10% in 2020. Mobile gaming is a significant market leader in both countries, accounting for more than half of the gaming revenue.

CacheFly's throughput is the best in South America. In this market you won't find a CDN to routinely outperform CacheFly, and we've got the features to optimize for your needs. South American internet penetration hovers at 72%, and CacheFly is dedicated to investing in expanding this market.

With current POPs in Sao Paulo, Bogota, Buenos Aires, La Paz, Rio De Janeiro, Lima, and Santiago de Chile, you can count on us to deliver your content reliably all over the continent.

APAC

APAC has the most complicated delivery profile on the globe. While countries like China, Japan and North Korea have some of the best penetration rates, there are also regions with very low internet penetration. Central Asia has only 54% internet penetration. China has the most gaming revenue of any nation, but is very difficult to deliver into from outside the mainland. For this reason many global CDNs partner with Chinese CDNs to address Chinese delivery. Japan and Korea also make the top 5 most lucrative nations for gaming. Online gaming is rapidly growing in the region.

CacheFly has PoPs in Bangkok, Beijing, Hong Kong, Jakarta, Melbourne, Mumbai, Perth, Seoul, Shanghai, Singapore, Sydney and Tokyo allowing us to deliver reliably throughout APAC.

Features

Cache Shield

100% Cache Shield is a dedicated storage space for only you, allowing you to keep your data and content closer to your customers without your neighbor's and sometimes your competitor's traffic reducing the experience of your customers. Dedicated storage space brings data closer to customers allowing for faster downloads and lower overall latency. This allows us to radically improve QoS while lowering origin spend drastically. We guarantee no cache misses - backed by our 100% SLA guarantee.

TLS On Edge

Make gaming instantaneous with latency consistently under 100ms. We can terminate your connections and push them to the edge, giving you more control of your routes and lowering latency. This speeds up queries to your game engine 70-80%.

Version Management/TTL

At CacheFly we offer improved TTL management. We simplify your configuration, allowing you to update your settings in the dashboard or use our machine learning processes to automate based on a reliable algorithm. We can use longer TTLs to keep content warm. Whether you choose to use Cache Shield or not, we are dedicated to managing your configuration in a way that keeps your content available and fresh. This becomes especially relevant when delivery software updates as we can quickly revert and replace content even when using longer TTLs. We can use CDN purging capabilities via our interface and API to invalidate objects in the cache.

HTTP/2

We consider ourselves your partner and consultant regarding your network optimizations. Which means we actually evaluate whether HTTP/2 is helping or hurting your website. We ask: are techniques such as CSS sprites, inlining assets, and domain sharding helpful or hurtful on a given HTTP/2 site? How are you measuring? Is the answer the same for all sites and asset types? There's no denying that for the majority of sites, HTTP/2 is faster in terms of performance and load time. There are also a minority of sites where HTTP/2 will decrease performance by up to 30%. That's why analysis is more important than ever.

Multi-CDN

Here at CacheFly we love Multi-CDN, in fact, we're the only CDN built from the ground up for Multi-CDN. We have serviced 100's of Multi-CDN customers, customizing solutions to their unique needs. The biggest challenge to any Multi-CDN deployment is ensuring consistent features across providers, be that image transformation, token authentication, URL routing and more. Our engineering team can review your existing configurations, duplicate functionality unique to other providers, and write custom solutions to handle any situation you throw at us, all in days not months. We pride ourselves on making Multi-CDN easy, and our industry leading throughput delivers a huge uplift in performance in any mix of providers.

TCP Optimization

BestHop -TCP controls the setup of connections between source and destination machines, the rate of packet transmission, packet loss detection, and recovery algorithms. With HTTP/2, multiplexing allows connection reuse along with parallel delivery of resources, which proves useful for package downloads. This can significantly decrease download time, especially when combined with header compression and resource prioritization, and is just one of many ways we maximize throughput. Here at CacheFly we use machine learning to model end user prefies behavior. We create profiles based on new, updated assumptions and prime the connection with past knowledge. We couple this assumption model with dynamic learning using an improved loss-detection algorithm. This allows us to aggressively recover from packet loss faster than traditional implementation.

Metric Tracking

The best way to improve performance is by tracking metrics to refine configurations for faster delivery.

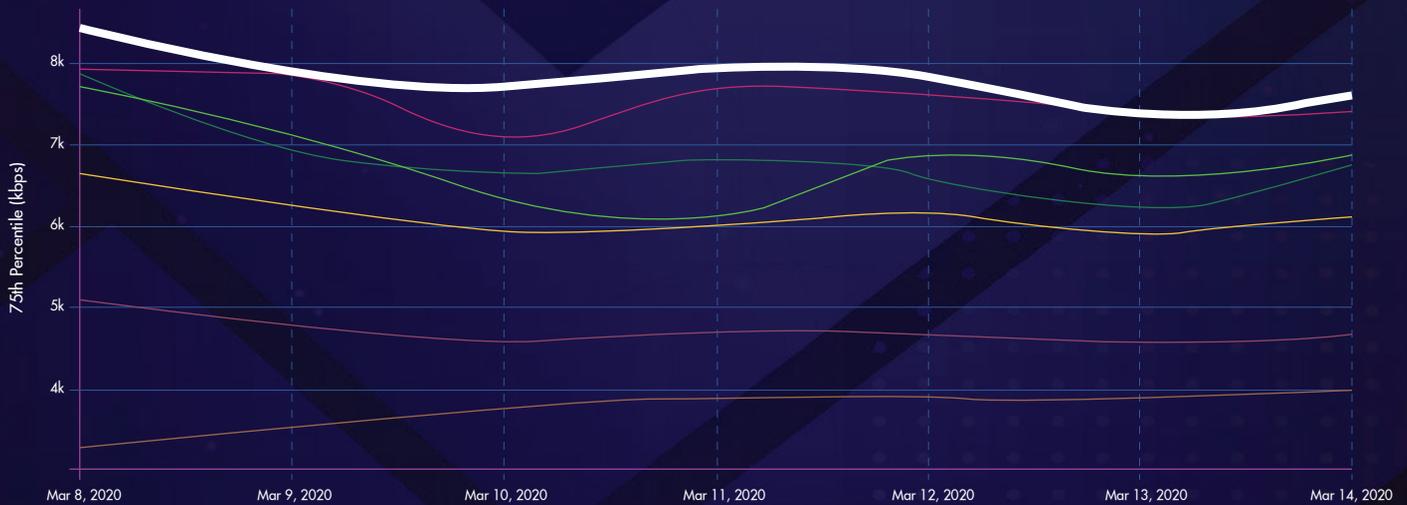
- Startup - With 100% Cache Shield, we can increase startup rates by keeping your most relevant content warm.
- Throughput - CacheFly has one of the best throughput rates in the industry for a much better price than other top performers.
- Download Completion - We understand that you need not only to know how many downloads complete but why some don't.

100% SLA

Since 2002, we've maintained an impressive track record of consistently delivering on our 100% uptime SLA.

#1 Fastest global throughput CDN

Cedexis, March 2020



● Akamai Object Delivery ● CacheFly ● CDN77 ● Cloudfront CDN ● Highwinds ● Limelight CDN ● MaxCDN

Conclusion

CacheFly is the number one CDN for global throughput.

Our powerful global throughput allows us to serve faster downloads. We offer 100% Cache Shield, protecting your content and delivering it from the edge. Our low latency allows games to stream with no lag. Our system supports cloud storage and game updates. As cloud gaming expands, it's a race to the edge, and we can deliver your content quickly and reliably. Our 100% SLA guarantee protects you from downtime. We have a 100% cache hit ratio, 53 Global POPs, 7 continents served, and 100% availability for more than 2 years.

Key Takeaways

Global Reach - As gaming expands globally, game launches need to be able to reach everywhere. CacheFly has you covered with the best global throughput of any CDN.

Fast Downloads - Pushing downloads and patches from Cache Shield storage prioritizes your download with incredible throughput paired with fast startup times.

Low Latency - Our competitive low latency decreases lag, and increases customer satisfaction, bettering your quality of service.

Scalable - By using a variety of edge acceleration techniques, including Cache Shield, we can scale rapidly to support your growing needs.

Secure - We use cutting edge security strategies to keep your data secure behind the scenes, leaving you and your customers safe from breaches.

