



Case Study

Hoa Toc Scales Gaming Infrastructure with BytePlus CDN



Introduction

In the rapidly evolving landscape of Vietnam's technology sector, Hoa Toc has emerged as a promising player in the electronic gaming entertainment services industry. Established in 2022, this Ho Chi Minh-based company represents the new wave of tech startups rising to meet the increasing demand for digital services in Vietnam.



Background

Vietnam's tech ecosystem has been experiencing significant growth, with a surge in startups and digital entertainment companies reflecting the changing media consumption habits of its population. Amidst this digital transformation, Hoa Toc has positioned itself at the intersection of technology infrastructure and gaming entertainment.

As Vietnam continues to embrace technological advancements across various sectors, including media, finance, and e-commerce, Hoa Toc's role in supporting the gaming industry becomes increasingly crucial. This case study explores how Hoa Toc leveraged BytePlus CDN + TOS solution to overcome infrastructure challenges and scale its business in this dynamic environment.



Company Overview

In the rapidly developing landscape of Vietnamese technology, Hoa Toc has emerged as a promising company in the electronic gaming entertainment sector. Founded in 2010, this Ho Chi Minh City-based company represents a new wave of tech startups rising to meet the growing demand for digital services. Currently, Hoa Toc is one of the few tech companies in Vietnam offering professional online gaming entertainment services.



The Challenge

As Hoa Toc expanded its services to multiple game publishers, it encountered several significant challenges to its growth and ability to provide high-quality services:

1

Fragmented CDN Management

Each game publisher preferred their own CDN provider, resulting in Hoa Toc having to manage multiple CDN accounts across various platforms.

2

Lack of Centralized Control

The diverse CDN architecture made it difficult for Hoa Toc to centrally manage and optimize CDN services across all its clients.

3

Performance Inconsistencies

Ensuring high-speed content delivery, especially in Vietnam and Southeast Asia, proved challenging with the fragmented CDN setup.

4

Meeting Diverse Client Needs

Game publishers' familiarity with different CDN providers created a complex environment where Hoa Toc needed to cater to varied preferences and requirements.

5

Scalability Concerns

As Hoa Toc's client base grew, the existing infrastructure needed improvement to scale more efficiently.

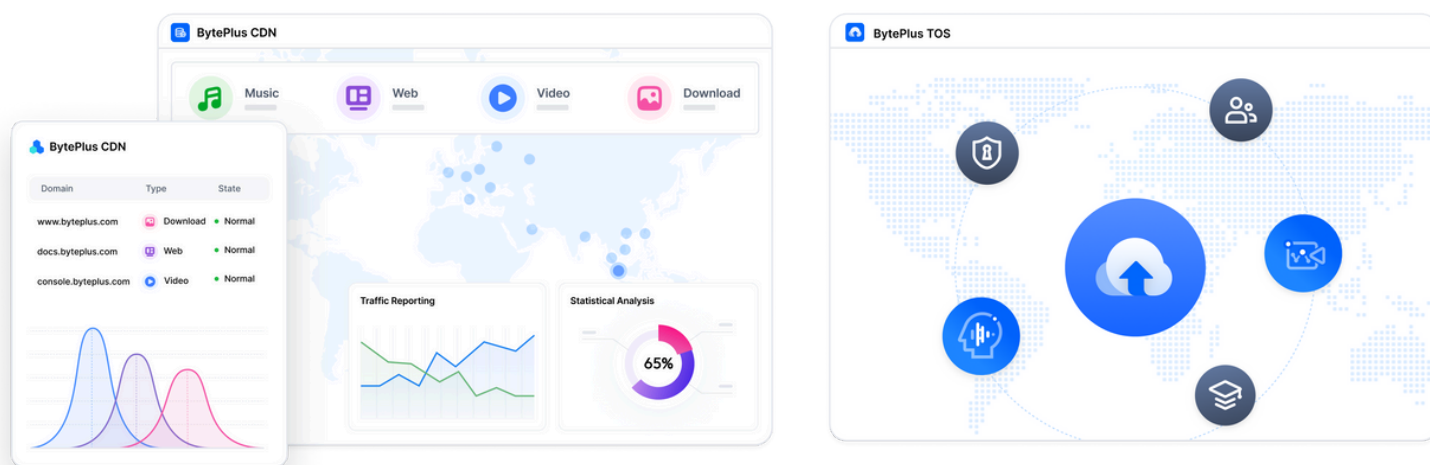
These challenges prompted Hoa Toc to seek a unified, scalable solution that could address its complex needs while providing superior performance for its gaming clients.

The Solution

BytePlus CDN + TOS

Faced with the challenges of managing multiple CDN providers and ensuring consistent performance across diverse gaming clients, Hoa Toc turned to BytePlus for a comprehensive solution. The company chose to implement BytePlus CDN integrated with TOS (Torch Object Storage), a decision that would prove transformative for their business operations.

The implementation process began with a careful migration strategy. Hoa Toc worked closely with BytePlus to transition their existing storage infrastructure to BytePlus TOS. This move laid the foundation for a more unified and manageable system. Simultaneously, they began the process of migrating CDN services from various vendors to BytePlus CDN, a task that required meticulous planning to ensure uninterrupted service for their gaming clients.



BytePlus's strong CDN performance in Southeast Asia, particularly in Vietnam, was a key factor in Hoa Toc's decision. The solution leveraged a sophisticated two-tier CDN structure with optimized network paths, designed to cater to the specific needs of the gaming industry where low latency and high-speed content delivery are paramount.

One of the most significant advantages of the new system was the hierarchical account management capability. Through the BytePlus CDN console, Hoa Toc gained the ability to manage separate domains, subdomains, and buckets for different gaming teams and customers, all from a single interface. This hierarchical structure allowed different gaming teams to manage their own resources independently while ensuring isolation between teams. The centralized yet segmented approach drastically simplified Hoa Toc's operations, allowing for more efficient management of resources, enhanced security through isolation, and quicker response times to client needs. This system empowered individual gaming teams with autonomy over their specific resources while maintaining overall administrative control and oversight for Hoa Toc.

BytePlus CDN integrated with TOS (Torch Object Storage) to address their challenges. The solution included:



Unified Infrastructure Migration

- Moved storage to BytePlus TOS
- Migrated CDN services from various vendors to BytePlus CDN



Performance Optimization

- Leveraged BytePlus's strong CDN performance in Southeast Asia
- Implemented a two-tier CDN structure with optimized network paths



Centralized Management

- Utilized BytePlus CDN console for centralized account management
- Enabled separate domain, subdomain, and bucket management for different customers



Enhanced Support

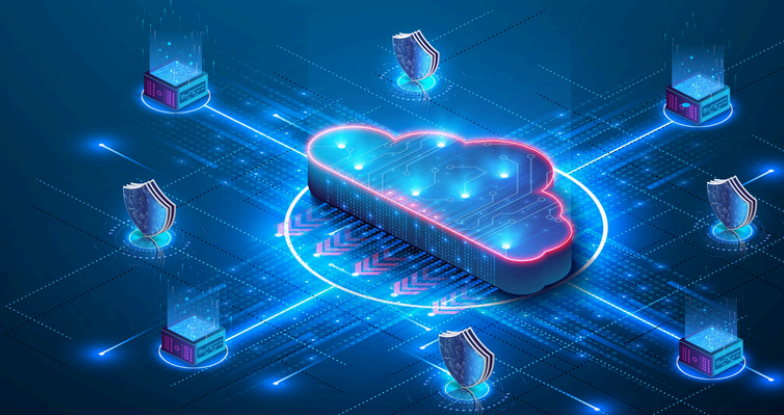
- Provided rapid response times for configuration and troubleshooting

Technical Implementation

The technical implementation of the BytePlus solution was a carefully orchestrated process that addressed multiple aspects of Hoa Toc's infrastructure needs.

At the heart of the solution was the strategic placement of the TOS origin in BytePlus's Malaysia data center. This location was chosen to optimize content delivery across Southeast Asia. To further enhance performance, BytePlus CDN adjusted the parent cache and L2 cache to be in the same data center, significantly increasing hit rates and reducing latency.

A crucial addition to this setup was the Data Migration Service on BytePlus's cloud. This service facilitates smooth data migration from different S3 Object Storage providers to TOS, streamlining the process, reducing effort, and ensuring data consistency. This capability was essential for efficiently transferring and managing large volumes of gaming assets across different storage systems.



The CDN structure itself was a marvel of modern content delivery technology. BytePlus implemented a two-tier CDN setup, with L1 and L2 caches strategically positioned to serve users across America, Vietnam, and Singapore. This setup utilized BytePlus CDN's optimized network between L2 and L1 tiers, creating a fast and efficient path for content delivery that could handle the demanding requirements of online gaming traffic.

A key feature of the implementation was the use of prefetch functionality. This forward-thinking approach forced package caching in both L2 and L1 CDN points of presence (PoPs), ensuring that frequently accessed gaming content was always readily available at the network edge. This strategy significantly reduced load times for end-users, as they could access content from the nearest PoPs, dramatically improving download speeds.

The results of these technical optimizations were impressive. Prior to the implementation, Hoa Toc's clients were experiencing download speeds of around 7-8 Mbps. After the BytePlus CDN and TOS solution was fully deployed, these speeds soared to over 30 Mbps, a transformative improvement that had immediate and tangible benefits for gamers.

The BytePlus solution involved several key technical elements:



Origin Optimization

- Placed TOS origin in Malaysia data center
- Adjusted L2 cache in the same data center to reduce latency for back to origin



Prefetch Functionality

- Implemented prefetching to force package caching in both L2 and L1 CDN pops
- Enabled users to access content from the nearest pops, improving download speeds



Multi-Tier CDN Structure

- Implemented two-tier CDN setup (L1 and L2) to optimize delivery across America, Vietnam, and Singapore
- Utilized BytePlus's optimized network between L2 and L1 for faster content delivery



Performance Metrics

- Increased download speeds from 7-8 Mbps to over 30 Mbps after optimization
- Increased hit rate to 99%

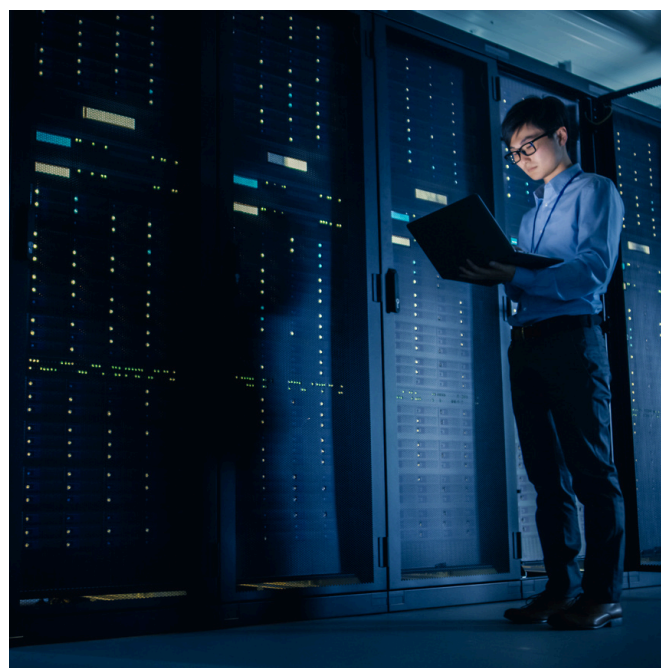
Business Impact

The implementation of BytePlus CDN + TOS solution touched every aspect of Hoa Toc's operations and client relationships.

Perhaps the most immediate and noticeable impact was on user experience. The dramatic increase in download speeds translated directly into faster loading times for game clients and updates. This improvement was particularly crucial in the competitive gaming industry, where every second of delay can impact a player's experience and potentially lead to lost customers.

Client satisfaction saw a marked increase. Hoa Toc reported a significant reduction in customer complaints related to performance issues. More importantly, their gaming clients began to see increased player retention rates. In a particularly telling example, a major client in the mobile gaming industry reported a substantial increase in player retention after Hoa Toc implemented the BytePlus CDN service.

Operationally, Hoa Toc experienced a new level of efficiency. The centralized management system provided by BytePlus allowed them to handle the complex needs of multiple game publishers with greater ease. Billing and performance monitoring, once tedious and time-consuming tasks, became streamlined processes that provided clearer insights into their service delivery.



The enhanced capabilities provided by BytePlus also gave Hoa Toc a strong competitive advantage in the market. They found themselves able to offer superior service compared to their competitors, particularly in terms of content delivery speed and system stability. This advantage translated into increased confidence in their ability to expand their business and invest in new strategies.

Perhaps most importantly, the BytePlus solution provided Hoa Toc with the scalability they needed to support their growth. The robust infrastructure allowed them to take on new clients and expand their services without fear of performance degradation.

Future Outlook



With the success of the CDN + TOS implementation, Hoa Toc is not resting on its laurels. The company is already exploring further enhancements to their service offerings. They are considering the adoption of BytePlus cloud security solutions to further protect their clients' assets and ensure the integrity of gaming experiences.

Additionally, Hoa Toc is evaluating the potential implementation of BytePlus WAF (Web Application Firewall). This move would add another layer of security to their infrastructure, protecting against a wide range of web-based threats that are particularly pertinent in the gaming industry.

As they look to the future, Hoa Toc sees their successful implementation of BytePlus CDN + TOS as just the beginning. The scalability and performance improvements they've achieved have opened new possibilities for growth and innovation. In an industry that never stands still, Hoa Toc is now better positioned than ever to meet the evolving needs of game publishers and players alike.

Their journey serves as a compelling example for other gaming infrastructure providers, illustrating how the right technological partnership can drive business growth, improve service quality, and ultimately enhance the gaming experience for players around the world.

