拓课云 Talk-Cloud | zenlayer

E-Learning Company Uses Zenlayer Edge Data Center Services to Rapidly Grow Their Network

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Summary

Talk-Cloud, an e-Learning platform used by universities and other online education providers, was experiencing exponential growth and needed rapid deployment of new network nodes to maintain customer satisfaction. The heart of their platform is two-way livestreaming, an application extremely sensitive to latency issues and network instability. By using Zenlayer Bare Metal Cloud and Edge Data Center Services for their network needs, Talk-Cloud was able to increase coverage by 40% while reducing latency by 5% and costs by 20%.

The problem

Without infrastructure, Talk-Cloud would fail to keep up with rapid growth and demand

Talk-Cloud has been experiencing rapid growth and global demand, with as many as 300,000 sessions a day being conducted in 2018. However, with increased growth came increased demands on their network. Low latency (<200 ms) is absolutely crucial for online education, which relies on two- or multi-way livestreaming for interactive experiences. Video lag distracts and detracts from the learning environment.

Without a reliable, low-latency network, Talk-Cloud would begin losing customers to competing platforms. Without a network that could rapidly expand, they would not be able to keep up with global demand. Additional concerns were data located in two different public clouds, variable network needs depending on regional demand, and difficulty hiring support in regions outside of Talk-Cloud's home country, China.

Online education thrives on interaction

As the globe has become increasingly connected, online education has surged. Teachers can reach students located anywhere as long as they have internet access. Studies show that these students do a better job of retaining material and staying engaged when they have high interaction with their teachers. However, when video lags and stutters interaction is severely reduced.

Video latency becomes noticeable to human perception around 200 ms. While a few stutters can be ignored, students quickly become disengaged if the lag continues. Due to the live nature of the conversation, pre-buffering is not an option. Latency must be lowered through dynamic routing and edge server usage.

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The solution

A flexible edge-based network

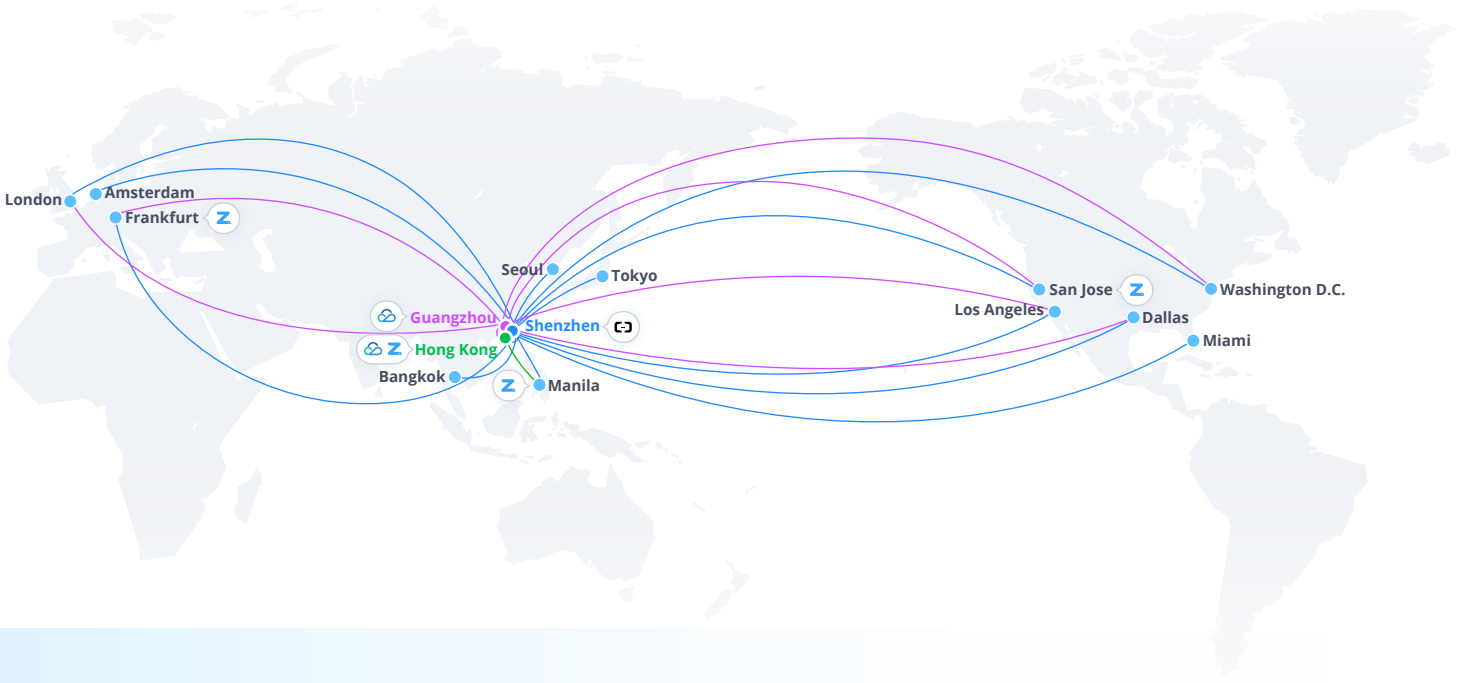
Zenlayer provided a multi-point solution, custom-tailored for Talk-Cloud's different needs in different regions. Each aspect could be rapidly deployed, meaning their network could (and would) be easily expanded in the future in any location

The proposal

There were four major "prongs" to the solution proposed:

- Bare metal servers at the edges of Talk-Cloud's network to reduce latency by handling processing near users.
- Managed hosting in additional edge locations, further customizing the network to match Talk-Cloud's user base.
- Leased lines provisioned on demand via Cloud Networking for access to Tencent Cloud or Alibaba Cloud, depending on the edge server location.
- IP transit with burstable bandwidth using Zenlayer's private, global backbone to connect the new nodes, existing locations, and public clouds.

For all services and locations, Zenlayer would serve as the single point of contact for maintenance and support.



Infrastructure
- Data Center

Connections
- Tencent (Guangzhou)
- Alibaba (Shenzhen)
- Tencent (Hong Kong)

Services
- Bare Metal Cloud

Public Clouds
- Tencent Cloud
- Alibaba Cloud

Hong Kong

All data centers are also connected to Hong Kong via a specialized, isolated connection

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The proof of concept

Talk-Cloud liked the proposal, so a proof of concept (POC) was made and allowed to run for one week to gather real-world statistics. They were able to directly compare the latency of public internet options, their current provider, and Zenlayer's global network. The POC found an average reduction in latency of 5% - an impressive number for interactive livestreaming where every millisecond of lag counts.

The deployment

Talk-Cloud placed an initial order for 16 nodes. Each node included at least one server and a dedicated line to a public cloud. Some of the locations would use Zenlayer's Bare Metal Cloud servers and some would use managed hosting through Zenlayer's Edge Data Center Services, depending on the Client's requirements.

Because Zenlayer already has resources and infrastructure around globe, deployments can be made very quickly. All 16 nodes were delivered in less than a month, with most of the managed nodes being ready within 1-2 weeks and the bare metal servers and Cloud Networking connections ready in literally minutes.

Talk-Cloud was able to start using the instantly deployed bare metal servers and connections right away. Within one week, they were so impressed by the realized lower latency and costs that they placed an additional order for eight more nodes. These nodes were delivered within just a week in locations as varied as Jakarta, São Paulo, and San Jose. Additional growth will be just as easy in the future.

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The results

Reduced latency and costs with increased coverage and user satisfaction

The results speak for themselves. Along with the instant 5% latency reduction which caused Talk-Cloud to order additional nodes just a week after the first were deployed, they have since seen a 40% increase in global coverage paired with a 20% reduction in costs. This is without sacrificing network reliability – Zenlayer Bare Metal Cloud guarantees 99.9% uptime. These results are possible due to Zenlayer's extensive global network and built-in redundancies, which allow immediate re-routing if necessary to avoid network interruptions.

Talk-Cloud can now focus on what it does best – online education with high-quality video and audio – without having to worry about underlying infrastructure. Their network can easily expand to match expected business growth, regardless of region or public cloud choice. Maintenance and support are handled by a single point of contact. Users, meanwhile, are continuing to flock to the Talk-Cloud platform as its reputation for seamless livestreaming grows.

By the Numbers

24
Locations

5%
Latency reduction

20%
Cost reduction

40%
Increase in coverage

99.9%
Uptime

1
Point of contact

Zenlayer products together and separate

It's easy to order an individual Zenlayer service, and it's just as easy to combine Zenlayer services together. Adding products is as simple as using child's building blocks. Talk-Cloud used Bare Metal Cloud, IP Transit, Cloud Networking, and Edge Data Center Services in conjunction with each other to create a flexible, global network for interactive livestreaming. It would be just as straightforward for Talk-Cloud to add DDoS Protection and Edge Computing Network, or to later decide they want to run their own servers but maintain the IP transit and Cloud Networking.

These products and services are available across 6 continents, with 30 locations available on demand and more than 150 choices for customized and managed deployments. No matter how you set up your solution, you can rely on only having just one, responsive point of contact for any and all concerns.

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