

Content Acceleration in the Age of the Cloud

With the cloud comes powerful benefits that can improve your organization's bottom line. Ideally, one benefit is that enterprise application users are able to access applications anywhere, anytime. Yet, applications and content are only as good as the network that supports them. In some cases, the network does not deliver reliable connectivity and performance as promised. Why does this happen and what can you do about it?

Transmission Control Protocol (TCP), by design, sacrifices performance to deliver the reliable transmission of content. TCP throttles back the delivery rate of IP traffic as the distance between the content or application source and the end user increases. In today's business environment, with mobile end users working from remote distances, this correlation between speed of delivery and the source is a big problem. The bottom line: your organization's communications can slow to a crawl.

TCP remains an underlying protocol of Internet traffic delivery so it is quickly becoming a priority for organizations to fast track application acceleration technologies in order to improve the end-user experience. Therefore, it is mission critical for organizations to find the application acceleration solution that will best meet their needs.

Exploring the following questions will help you decide if your organization is in need of deploying an application acceleration solution, and if so, which one will work best.

Q Do your end users consistently experience latency and packet loss?

A The cloud can help your organization's bottom line but, in cases where end users are widely distributed, may provide less than reliable connectivity and performance. This is because more organizations rely on remotely-housed content and applications, which is limited in delivery due to the conservative approach of TCP to IP traffic delivery. Consequently, many organizations are taking steps to address TCP's limitations by employing application acceleration solutions. There are application acceleration solutions that will suite every organization's needs, including:

- Hardware-based acceleration (WAN Optimization)
- Acceleration-as-a-Service (AaaS)
- Cloud Acceleration

Q Do your end users complain about delivery speed, even though they are located at known branch sites?

A Many organizations use centralized applications at a specific hub, with end users accessing them from known branch sites. Other organizations access applications over the Internet between fixed branch locations. Yet, in both cases, end users still experience slow delivery speeds. If this is your situation, you may want to consider deploying a hardware-based acceleration solution, which can improve delivery speed two-fold, or more.

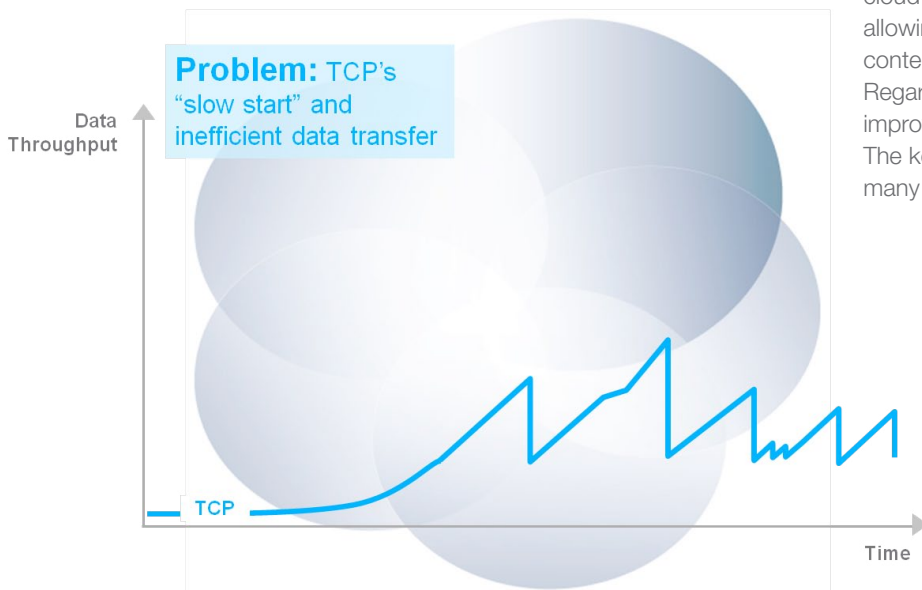
While hardware-based acceleration solutions are effective for point-to-point architectures, they are not ideal for those organizations with a geographically distributed users, who access data beyond fixed branch locations. In this situation, you will need an acceleration solution that will take the delivery of content beyond the walls and across the globe. Deploying hardware is also very costly in terms of immediate capex and may be prohibitive for some small and medium businesses (SMBs).

Q Have you deployed more hardware, closer to your end users, in the attempt to accelerate delivery?

A In normal TCP transmission, delivery speed is directly affected by the distance between the data's starting point and the end user due to the peering nature of the internet which contributes to latency and packet loss. Many organizations have tried to address this issue by deploying multiple data centers close to their end users. This, however, can be costly, requiring constant maintenance. Not to mention that this solution does not address the issues that come with having end users that are widely geographically dispersed, and who access data beyond fixed branch locations.

Acceleration-as-a-Service (AaaS) is a solution where the acceleration is provided by the carrier or ISP. AaaS solutions allow you to set up your Internet service at the hub location where your application is hosted with a service provider that offers integrated TCP acceleration. With this service-based solution, no additional hardware or data center build out is required, yet content delivery is accelerated regardless of the end user's geographical location. In fact, AaaS solutions are capable of speeding content delivery in the range of 1.5x to 4x, which can markedly improve the end-user experience.

Problem: TCP's "slow start" and inefficient data transfer



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Q Does your organization's success depend on the transmission of dynamic, rich content from the application source to its customers?

A If your organization relies on dynamic web content or e-commerce sites, then reliable performance is critical. Cloud acceleration is the next frontier for acceleration technology and is best suited for dynamic content because it optimizes the entire delivery path over the network that the service provider manages. Such optimization accelerates cloud application and content delivery in both directions, allowing organizations and their customers not only to receive content faster, but to deliver or upload it more quickly. Regardless of your organization's situation, it is possible to improve the performance of your cloud-based applications. The key is to examine your organization's structure, and how many of your end users are widely distributed.

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