

Cloudflare's Response to Ofcom's Interim Report

Introduction

Cloudflare welcomes the opportunity to respond to Ofcom's Interim Report. The focus of this response will be barriers to cloud switching, and in particular the use of egress fees for vendor lock in and anti competitive practices

(1) Potential barriers to switching and multicloud

a) Please provide your views on the extent to which, and in what ways, egress fees are a barrier to switching and multi-cloud. Please also provide your views on the extent to which egress fees currently charged relate to the incremental cost of providing egress.

Cloudflare's position on egress fees as a barrier to switching and multi-cloud uptake

Egress fees are a key concern for existing customers because they may significantly increase the cost of taking a service from a different cloud provider and lead to customers being locked in to their cloud provider contracts, thereby hindering competition. Cloudflare's [research](#) has found that reducing or eliminating egress fees can save customers between 7.5% and 27% of their total monthly bill.

The fees almost always increase over time: as a company grows more reliant on the cloud, the cost of egress rises. When the diversity and sophistication of a company's IT stack grows, more data naturally needs to travel between more of their applications across clouds. The egress tax increases because there is more data to move, but at that point, the customer has already invested so much in their cloud infrastructure — ultimately, resulting in vendor lock-in.

Cloudflare, therefore, takes issue with the current data transfer model undertaken by hyperscalers. Hyperscalers, specifically AWS, create a situation where customers must pay high egress fees to remove their data from that cloud. That disincentivizes both wholesale and partial switching of data, as well as the use of tools outside the hyperscaler's own cloud platform, i.e. platform lock-in. Once customers build their entire stack on one cloud provider's platform and get their data into the platform (at zero cost), egress fees can make it prohibitively expensive for the customer to re-architect and migrate the full application – or even parts of it, thus also hindering the uptake of multi-cloud solutions. AWS understands the customer journey very well. Hence it makes building the stack and getting data in very easy (for instance by not charging ingress fees and offering cloud credits) but moving the data out very difficult and expensive.

We disagree with AWS' argument in their [public response](#) to Ofcom that they do not charge their customers egress fees, in fact our analysis demonstrates that AWS charges its customers based on the total data transferred out of their cloud. At the same time, when they do use third party transit providers, they pay based on peak (or 95th percentile) bandwidth consumed. AWS incurs costs when their peak bandwidth increases, yet they charge for the total data transferred, even though much of that data will transfer at off-peak times and not increase their costs. More information on AWS' pricing and our analysis can be found [here](#).

The marginal costs of data transfer for the hyperscalers are often near-zero in connection with data transfers for large customers. Most of these customers use third party content delivery network providers ("CDN") to transfer data from the hyperscalers' clouds to third party infrastructures. Because these CDN's have interconnected their infrastructures with the hyperscalers' (e.g. put their infrastructures in the same physical location and interconnected with them), the hyperscalers' cost to transfer such data is virtually zero. Indeed, perhaps this is why the hyperscalers charge nothing for data ingress.

We of course recognise that cloud providers incur certain fixed costs associated with the build-out of their networks and that these need to be recouped. This should not however be done under the guise of charging for egress, as Google for example alludes to in their response to the Interim Report findings. Any costs associated with investing in network infrastructure are already being recuperated via charging for data storage, and should not be done by penalizing customers for wanting to transfer their data out of a certain provider's cloud network.

Charging Model for Egress Fees

The general rule of thumb is that all traffic coming from the Internet (ingress) into cloud storage enters for free, and traffic exiting (egress) is chargeable, if it exceeds the provider's free tier. Many cloud providers, namely AWS, will charge up to \$0.09 USD per gigabyte transferred from their storage, regardless of the use case.

Specific egress fees are not always transparent, and can be difficult to predict. Understanding the line-by-line charges for egress can require some depth of application architecture and cloud infrastructure expertise — which not all organizations have and will be a barrier for smaller companies with less resources.

We therefore urge Ofcom to take a balanced approach when it comes to intervening on egress fees. Cloudflare certainly agrees with the position that egress fees should be minimized so as to allow for more customer choice, and we would suggest a charging model for transferring data out that is proportionate to the cost of transferring data in. Some costs for example for transit will still need to be incurred, however, we recognise that these are minimal and even if they were to be passed on to cloud customers, they would not be a barrier to switching such as there exists in the current hyperscaler charging models today.

Cloudflare's charging model

Cloudflare offers zero-egress fee object storage via a service called Cloudflare R2, which allows for fast and free data retrieval. Cloudflare aims to help developers and organizations avoid vendor lock-in with this service.

Additionally, in 2018, Cloudflare founded the Bandwidth Alliance, a group of cloud providers that include Azure, Google Cloud, Oracle, Alibaba Cloud, and, importantly, many of the industry's smaller cloud providers, such as Scaleway, Vultr, Wasabi and others. To help customers save on egress fees, Bandwidth Alliance members agree that data being transferred between any of the participating providers can be moved for free or at a discount.

Cache Reserve is another service Cloudflare offers for reducing egress fees. Cache Reserve helps ensure that assets remain cached in the Cloudflare CDN, even if they are rarely requested, so that they do not have to be served from the customer's origin server. This increases cache hit ratio and helps eliminate egress fees.

Conclusion

Cloudflare strongly believes that egress fees are a key barrier to switching and would welcome the opportunity to continue to work with Ofcom on a pricing model that is balanced, proportionate and is in the best interest of the end customer.