

# WebEx Scaling During Covid

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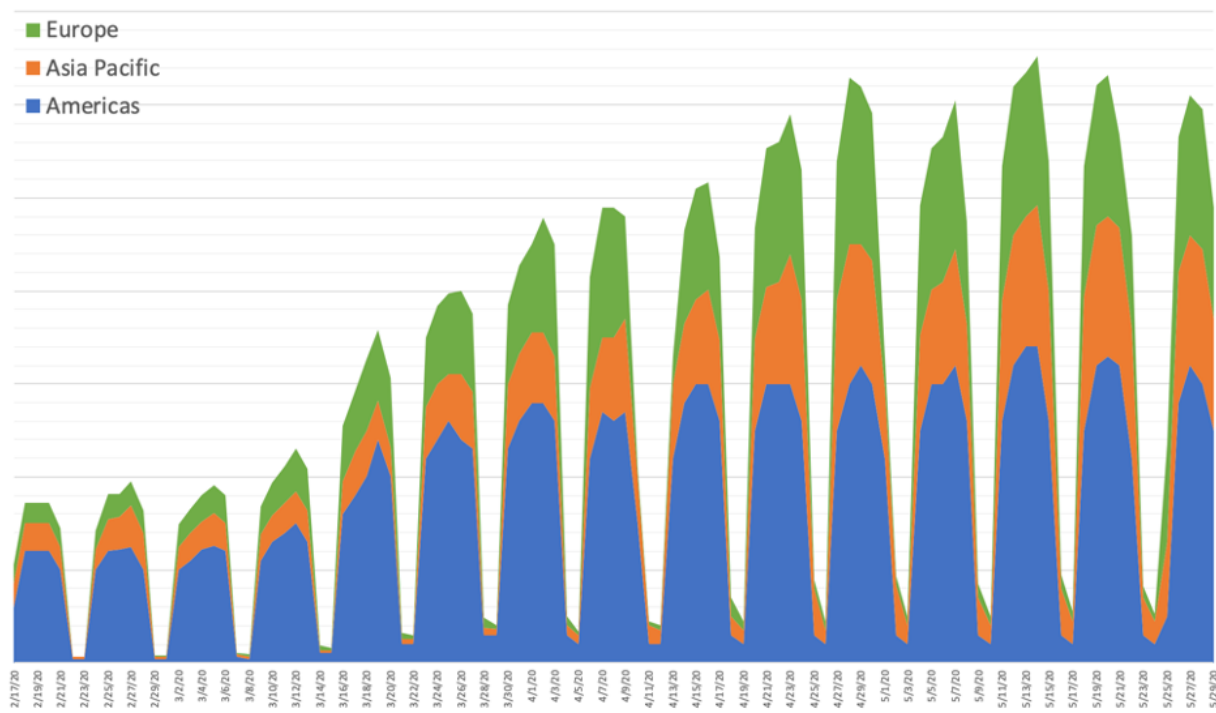
During the COVID crisis, all major video conferencing systems saw a dramatic rise in usage as people moved to working from home. This paper attempts to provide some broad information about how that scaled for WebEx without getting into the details of the numbers. We hope that this information will be useful for designing scalability requirements for future systems.

We are unaware of any other time on the internet where applications with billions of minutes per month of usage doubled in scale in roughly a month.

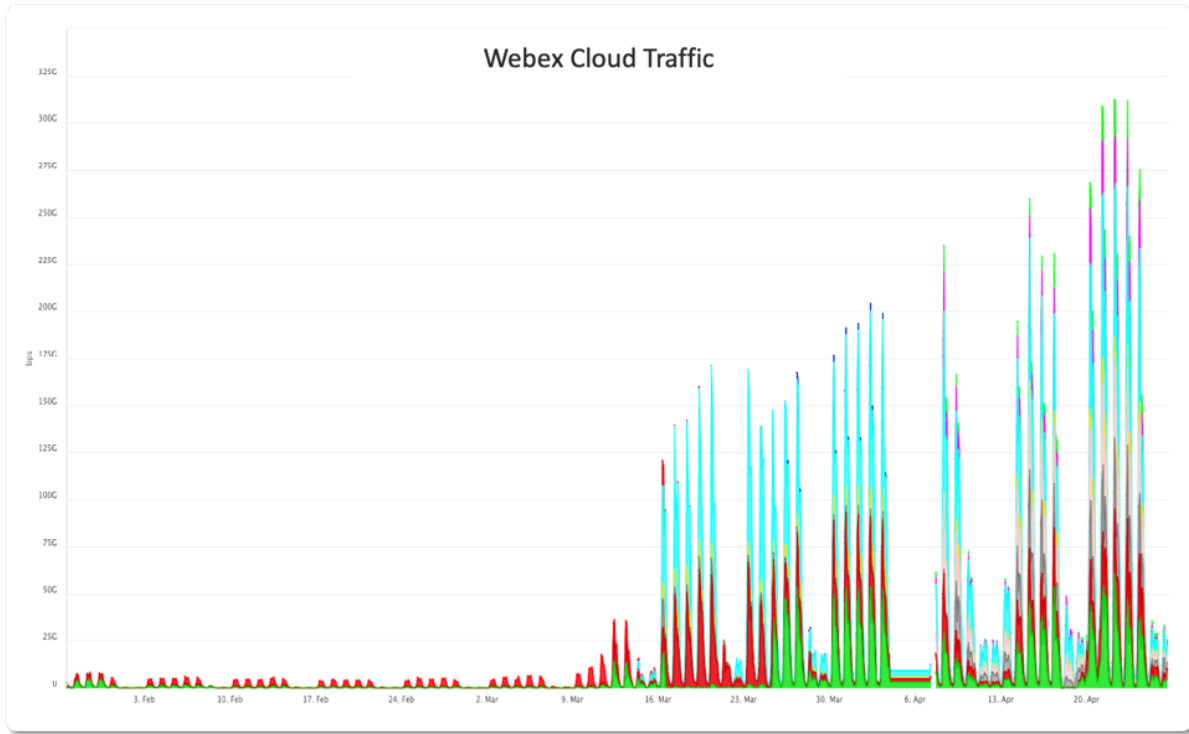
	Feb 2020	Mar 2020	April 2020
Meeting Minutes	6.7B +	13.3B +	21.8B +
Number of Meetings	37M +	73M +	96M +
Number of Participants	161M +	350M +	509M +

To explain the terminology, if seven people were all in the same meeting for 20 minutes, we would count that at  $7 \times 20 = 140$  meeting minutes.

The concurrent peak number of attendees by region grew along the following lines from Feb 1 to May 29.

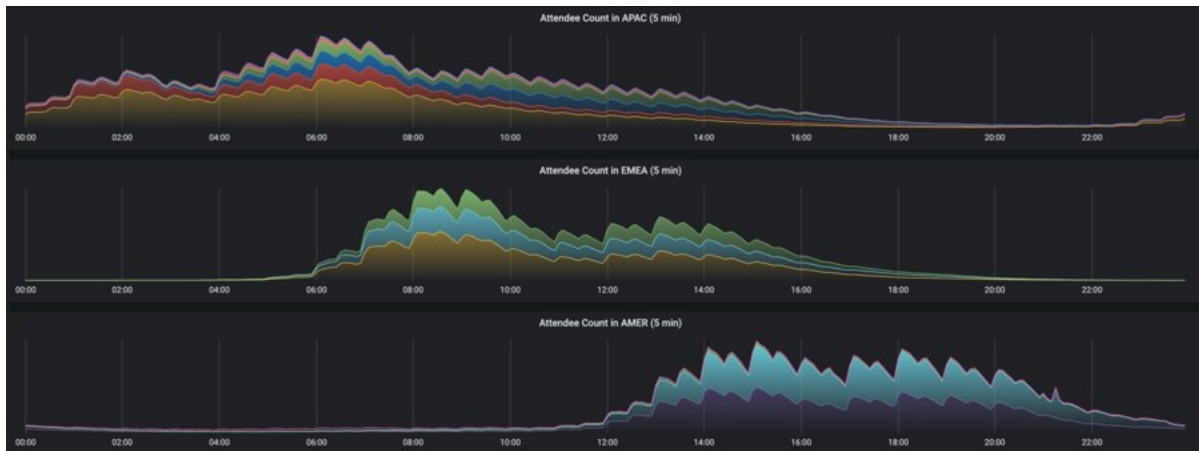


The usage of cloud bandwidth grew as shown in the following graph.



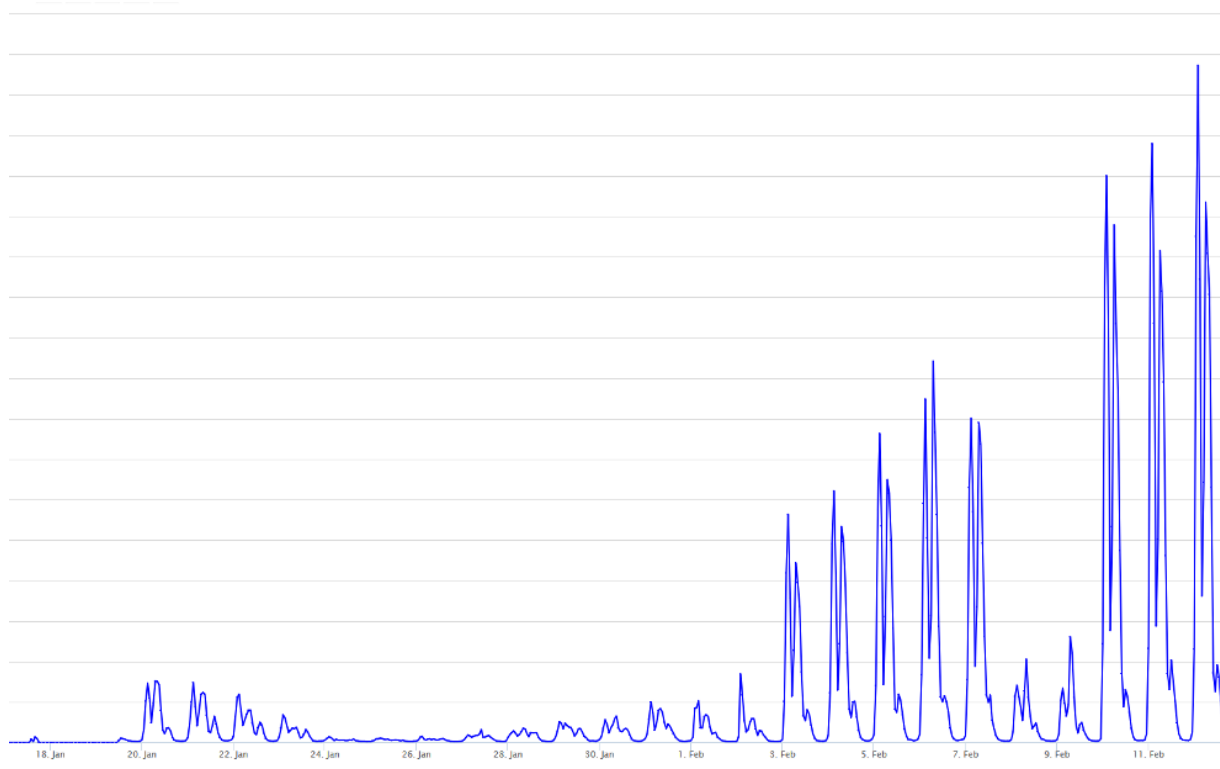
## Daily Distribution

The following image shows the participant count in some major countries in the Americas, Asia, and Europe over a 24 hour period. Before you look at the detailed annotations, can you guess which group corresponds to each region?



## Ability to Predict

One question we get asked is how much one could have predicted from network traffic that a large increase was coming. This is the traffic out of China into WebEx from Jan 18 to Feb 13.



## Key Observations

This rapid scaling-up placed many demands on the amount of networking traffic WebEX uses. This would not have been possible without:

1. Early observation combined with quick worst-case forecasts
2. Contacting vendors early and working to buy more networking
3. Having great vendor relationships that allowed technical work to proceed before modifications to normal legal / financial contracts were all finalized
4. Ability to move resource-intensive flows between data centers and regions
5. Ability to reduce resolution and bandwidth usage dynamically for different regions and usage groups
6. Major providers of streaming video services agreeing to substantially reduce network usage to make space for other applications such as web conferencing. (We should all say a big thanks to all the major bandwidth users that reduced usage.)

## 2020 Hindsight

One of the key observations is that end users have a very clear idea of which applications and usages are most important to them. They might be using one application for their work or school, while at the same time someone else in the same house is watching a movie. We need a realistic way for end users to be able to control their intent around relative importance of traffic on the WAN and WiFi.

Few interesting observations about this:

- Only the major applications end up mattering
- The major applications are willing to work towards what the users desire even if it is not in the best interest of the vendor
- Vendors care that their sacrifice is not used by a competitor to gain a competitive advantage