CEN Price Calculation

Cloud Enterprise Network (CEN) allows to dynamically adjust the bandwidth value of a bandwidth package at any point in time.
Important: Downscaling a bandwidth packet during a subscription period is only supported in INTL Portal. It is not supported in Domestic Portal (only upscale!

Quick Facts

- The change of the bandwidth is effective immediately. Meaning, the updated bandwidth can be used immediately by your applications, and it takes immediate effect on your bill.

- The billing granularity is in *seconds*. The length of the billing period depends on the subscription type:
    - For monthly subscription it is always exactly 30 days independent from the calendarian length of a particular month.
    - For a yearly subscription it is always 12 months à 30 days

- The effective billing in both up- and downscale scenarios is always based on the remaining time of the billing period, and will result in a dedicated item on the bill. So, in case of a monthly subscription this is the time in seconds until the end of the month, in case of a yearly subscription this is the time in seconds until the end of the year.

- Be aware that an upscale might result in very large billing items since the price is calculated upfront until end of the month (monthly subscription) or even until end of year (yearly subscription). Thus, make sure that the customer has a large enough credit limit on his Alibaba Cloud account, even though he might never actually spend it.

- Every up- and downscale action results in an additional item on the customer's bill. In case of an upscale it is a billing item, in case of a downscale it is a refund. In below picture you can see an according excerpt from a real billing where the customer scaled up the bandwidth for roughly 2 days and then downscaled the bandwidth again.

Figure 1: Excerpt from a real-world customer bill showing up- and downscale billing items of a yearly subscription

Calculation Formulae

Let's assume the following parameters:

- New configured monthly bandwidth package price = *Price (New BWP)*
- Previously configured monthly bandwidth package price = *Price (Previous BWP)*
- Remaining time in seconds of current billing period
  (either until end of month or end of year) = *Rest Time*

Upscale

New BWP is 20 Mbit/s, Previous BWP is 10 Mbit/s.

(*Price (New BWP)* / 30 / 24 / 3600 * *Rest Time*) - (*Price (Previous BWP)* / 30 / 24 / 3600 * *Rest Time*)

This results in an additional billing item **>** USD 0.00

Downscale

New BWP is 10 Mbit/s, Previous BWP is 20 Mbit/s.

(*Price (New BWP)* / 30 / 24 / 3600 * *Rest Time*) - (*Price (Previous BWP)* / 30 / 24 / 3600 * *Rest Time*)

This results in an additional billing item **<** USD 0.00 which is a refund.

Example

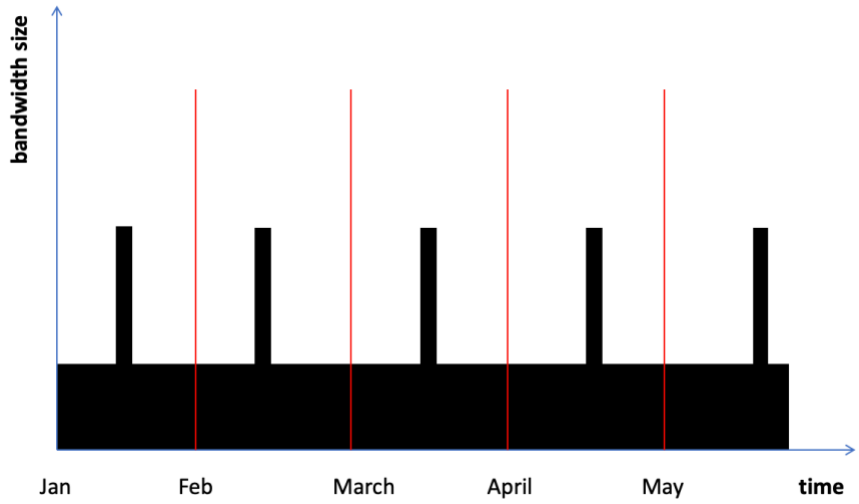
This section will present different usage examples and patterns of up- and downscaling CEN bandwidth packages and will explain the according implications and caveats.

Batch Transfer / Spike

A common pattern we are seeing is that customers are upscaling their bandwidth package for a certain relatively short period of time to a higher value to transfer huge amounts of data. After the copy operation has been finished they are downscaling back to the minimum size (2 MBits) for occasional management and operational tasks (e.g. remote sessions).

Monthly Subscription

In below picture we see that the bandwidth is upscaled once a month to higher value for a relatively short period of time and then downscaled again.
Let's assume that the bandwidth is usually set to 2 Mbit and upscaled once a month up to 10 Mbit for 2 days (48 hours) always on the 11th day at 00:00am, and then downscaled again on the 14th day at 00:00am. Furthermore, we assume a "Mainland China <-> Europe" bandwidth package and according prices.



We will see three billing items on the monthly bill (e.g. January):

1) Initial upfront payment for January for 2 Mbits
2) Additional billing item for upscaling to 10 Mbits for 20 days
3) Refund item for downscaling back to 2 Mbits again for the remaining 17 days.

Let's calculate the exact price for the 3 billing items according to the formulae introduced above. Monthly price for 2 Mbits is USD 306, and 1530 for 10 Mbits.

1) Initial upfront payment for 2 Mbit is **USD 306,00**.
2) Upscale to 10 Mbits for remaining 20 days
   [USD 1530 / 30 / 24 / 3600 * (20 * 24 * 3600)] - [USD 306 / 30 / 24 / 3600 * (20 * 24 * 3600)] =
   = USD 1020,00 - USD 204,00 = **USD 816,00**
3) Downscale back to 2 Mbits after 48 hours for remaining 18 days
   [USD 306 / 30 / 24 / 3600 * (18 * 24 * 3600) - [USD 1530 / 30 / 24 / 3600 * (18 * 24 * 3600)] =
   = USD 183,60 - USD 918,00 = **USD - 734,40**

In total, the customer will have to pay
USD 306,00 + USD 816,00 - USD 734,4 = **USD 387,60 for January**

Yearly Subscription

Let's now look at the same pattern and numbers with a yearly subscription. We will see the importance of a sufficiently high credit line of the customer account since the billing items will become much higher due to the higher rest time until the end of the year.

Let's look at the calculation for the January bill assuming that the yearly subscription was bought at January 1st 00:00am

1) Initial yearly upfront payment for 2 Mbit is **USD 3672,00**
2) Upscale to 10 Mbits for remaining 350 days
   [USD 1530 / 30 / 24 / 3600 * (350 * 24 * 3600)] - [USD 306 / 30 / 24 / 3600 * (350 * 24 * 3600)] =
   = USD 17850,00 - USD 3570,00 = **USD 14280,00**
3) Downscale back to 2 Mbits after 48 hours for remaining 348 days
   [USD 306 / 30 / 24 / 3600 * (348 * 24 * 3600) - [USD 1530 / 30 / 24 / 3600 * (348 * 24 * 3600)] =
   = USD 3549.60 - USD 17748,00 = - **USD 14198,40**

So, in addition to his yearly upfront payment, he needs to pay an additional fee for January of USD 14280,00 - USD 14198,40 = **USD 81,60.**

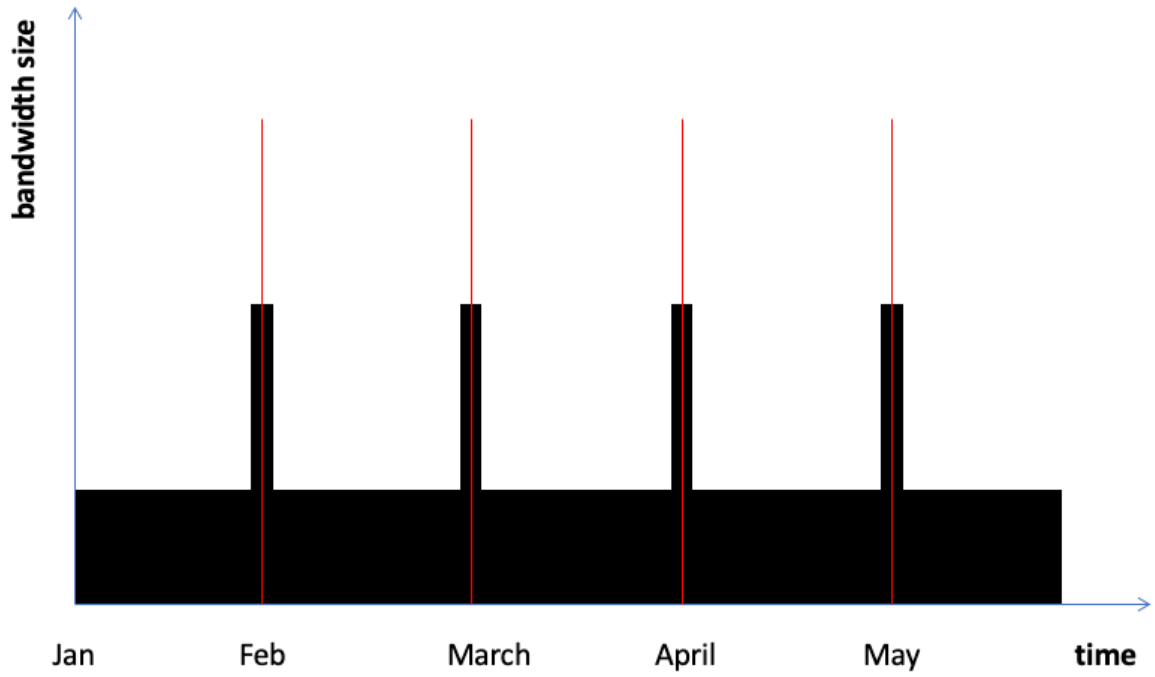
As you can see in 2), however, the customer account needs to have an approved credit line of at least USD 14.280,00. In cases where the bandwidth is upscaled even higher you can easily see that the credit line might need to be increased to much higher values. Otherwise, the upscale action will fail if the credit line is not sufficient.

Batch Transfer during Month Change / Spike Month Change

Let's look at another spike scenario. This time, however, spike starts at the end of the month, and only ends during the beginning of the next month. This has some very interesting pricing implication we like to discuss based on a yearly subscription model.

Yearly Subscription

Let's calculate the bill the customer will receive for the month of January, and February. We assume that the bandwidth is scaled up at the very beginning of the last day (00:00 am) of each month and scaled down at the very beginning (00:00 am) of each 2nd day of the following month. That is, 2 full days, e.g. 48 hours, in total.



January

1) Initial yearly upfront payment for 2 Mbit is **USD 3672,00**
2) Upscale to 10 Mbits for remaining 331 days
   [USD 1530 / 30 / 24 / 3600 * (331 * 24 * 3600)] - [USD 306 / 30 / 24 / 3600 * (331 * 24 * 3600)] =
   = USD 16881,00 - USD 3376,20 = **USD 13504,80**

Note that the customer needs to pay USD 13504,80 for January even though he only scaled it up to this value for one day in January! If you imagine an upscale to 100 Mbit this even becomes USD 135.040,80!

February

1) Downscale to 2 Mbits for remaining 329 days
2) [USD 306 / 30 / 24 / 3600 * (329 * 24 * 3600)] - [USD 1530 / 30 / 24 / 3600 * (329 * 24 * 3600)] =
   = **USD -13423.20**
3) Upscale to 10 Mbits for remaining 301 days
   [USD 1530 / 30 / 24 / 3600 * (331 * 24 * 3600)] - [USD 306 / 30 / 24 / 3600 * (331 * 24 * 3600)] =
   = **USD 12280,80**

This time and for all subsequent months the customer will actually be refunded. For February, the refund will be **USD -1142,40.**

Conclusion

There two key takeaways regarding the subscription-based CEN pricing model with regards to up- and downscaling the bandwidth at arbitrary points in time during the monthly or yearly subscription period:

1) Every up- and downscale of a bandwidth package results in a dedicated line item in the monthly bill. An upscale is a cost line item on the bill whereas a downscale is a refund line item. *For an upscale action to succeed the customer's credit line must be at least as big as the resulting cost line item.*

2) The effective price invoiced at the end of the month is the sum of all cost and refund line items within that particular month. For yearly subscriptions the amount can sometimes get very high in case of upscales during turn of the month. See chapter "Batch Transfer during Month Change / Spike Month Change" for details.