

# Upload Fee Formula

S. Shirmardi, A. Arbabi

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## 1 Upload fee

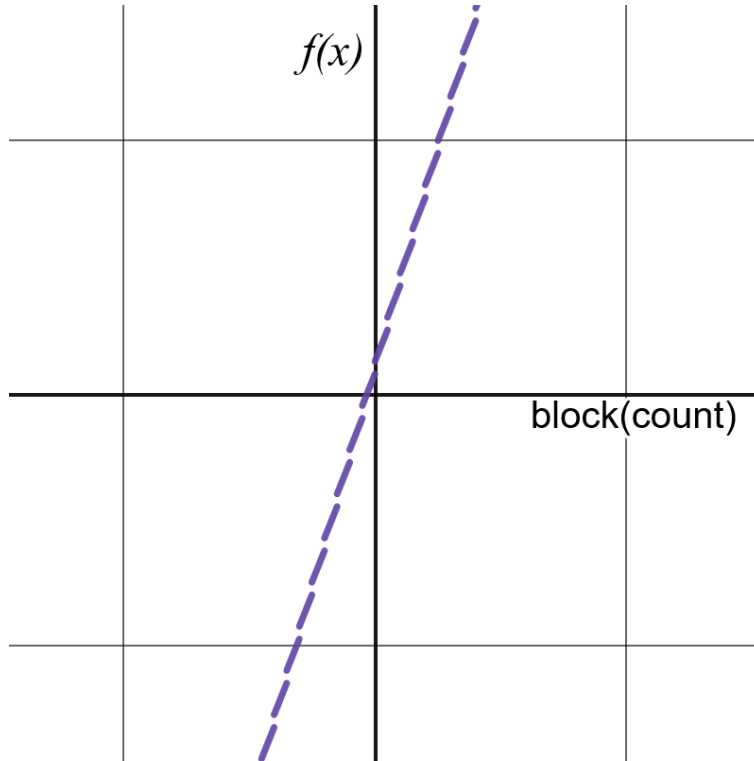
$Fee$  is the function that generates the entire amount of upload fee:

$$Fee(s_c, t, s) = f(s_c) \sum g(t, s) \quad (1)$$

for this entire report,  $s$  is the size of last uploaded files and  $t$  is the time difference between the last upload date and current upload date and  $s_c$  is the current file size.

**Definition.**  $f(x)$  is the upload fee based on current file size and  $\alpha$  is the base upload fee amount.

$$f(x) = \alpha x + [x] + \alpha \quad (2)$$



**Definition.**  $g(x_1, x_2)$  is the coefficient of  $f(x)$  based on the number last uploaded files by the user and it's calculated as follows:

$$g(x_1, x_2) = h(x_1)k(x_2) \quad (3)$$

where  $h(x)$  and  $k(x)$  measure the impact of time and size and are described in the next section.

## 2 Influential factors

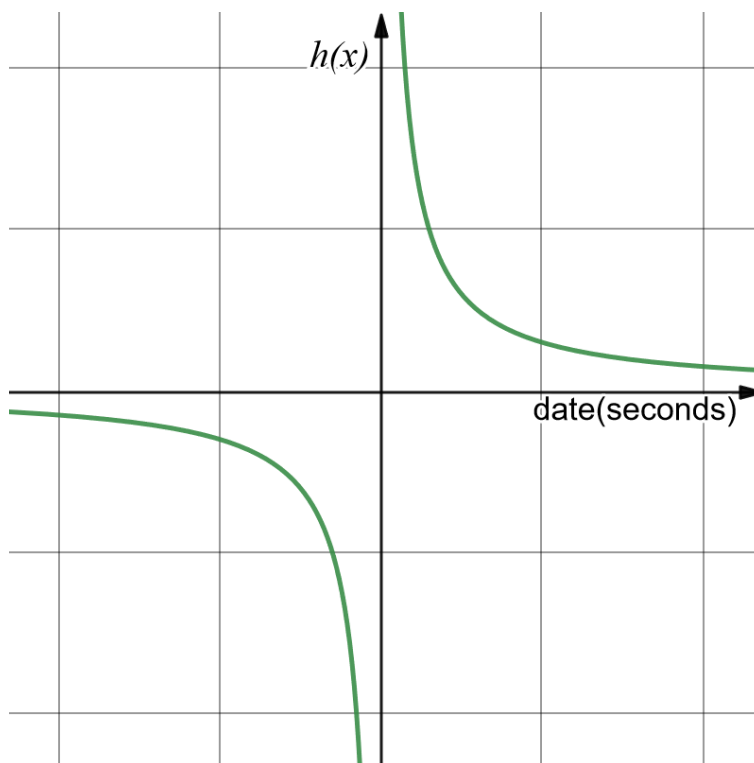
In this section, we will describe the impact of the number, date and size of a user's uploaded files on the fee.

### 2.1 Impact of time

For an arbitrary period,  $T$ , the function that indicates the impact of last uploading time is described as follows:

$$h(x) = \begin{cases} (\frac{T}{x})^n & 0 < x < T \\ 1 & x > T \end{cases} \quad (4)$$

**Note.**  $n$  is an optional variable and can be set to change the amount and influence of  $h$  in the final formula.



## 2.2 Impact of size

Let  $T$  be the same arbitrary period as the previous section, the impact of the size of the files uploaded (over time) is calculated as described below:

$$k(x) = \frac{-T}{x + \frac{T}{\beta}} + \beta \quad (5)$$

where  $\beta$  is an undecided constant that must be set to balance the plots of the last uploading time and size.

