

# Exercise Sheet 7

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## 1 Exercise 1: AWS Import/Export vs. Internet

### 1.1 Time for Internet Transport

If we use 3Terabyte and 100Mbit/s

- 3TB  $\rightarrow$  Mbit
- $3 * 1000^2 * 8 = 24000000\text{Mbit}$
- $T = \frac{24000000\text{Mbit}}{100\text{Mbit/s}}$
- $\rightarrow 240000 \text{ s}$

$\rightarrow$  Complete Transfer Time: 2,78 days

### 1.2 Time for Amazon Import/Export

If we use 3Terabyte and 100Mbit/s

First we want to detect, if we can reach our post office on time at the same day.

- Calculate DataTransfer Time (DT1)
- 3TB  $\rightarrow$  MB
- $3 * 1000^2 = 3000000\text{MB}$
- $DT1 = \frac{3000000\text{MB}}{125\text{MB/s}}$
- $\rightarrow 6\text{h } 40\text{min}$

Now we know that the time for DataTransfer need 6h 40min. But we need 15min additional for packing the HDD and another 15min additional to take it to the post Office. Now we can calculate if we arrive the post office on time.

$9:00\text{h} + 6\text{h } 40\text{min} + 15\text{ min} + 15\text{min} = 16:10\text{h} \rightarrow$  we reach the post office on time

→ We need 25h from 9:00h till it is reached Amazon (because of different time zones)

Now we know that we need 25h till it is at Amazon, but we need to calculate the DataTransferTime (DT2) for copying the data to S3.

- 3TB with 150MB/s
- $DT1 = \frac{3000000MB}{150MB/s}$
- → 5h 33min 20s

→ Complete Transfer Time: 25h + 5h 33min 20s + 3h = 33h 33min 20s

### 1.3 Data Rate for Internet Transport

We know already that the time for Transporting via Internet took 2,78 days. Now we calculate it into seconds to get our data rate.

- 2,78 days = 240192s
- $\frac{24000000MBit}{240192s} = 100Mbit/s$

### 1.4 Data Rate Amazon Import/Export

We know already that the time for Transporting via Import/Export took 33h 33min 20s. Now we calculate it into seconds to get our data rate.

- 2,78 days = 120800s
- $\frac{24000000MBit}{120800s} = 199Mbit/s$