Simple Bound

- Use uniform initial weights $w_i^1 = 1/N$
- Total Weight is at least the weight of the best expert.

$$
\begin{aligned}
L_A^T &= -\log W^{T+1} = -\log \sum_{i=1}^{N} w_i^{T+1} \\
&= -\log \sum_{i=1}^{N} \frac{1}{N} e^{-L_i^T} = \log N - \log \sum_{i=1}^{N} e^{-L_i^T} \\
&\leq \log N - \log \max_i e^{-L_i^T}
\end{aligned}
$$