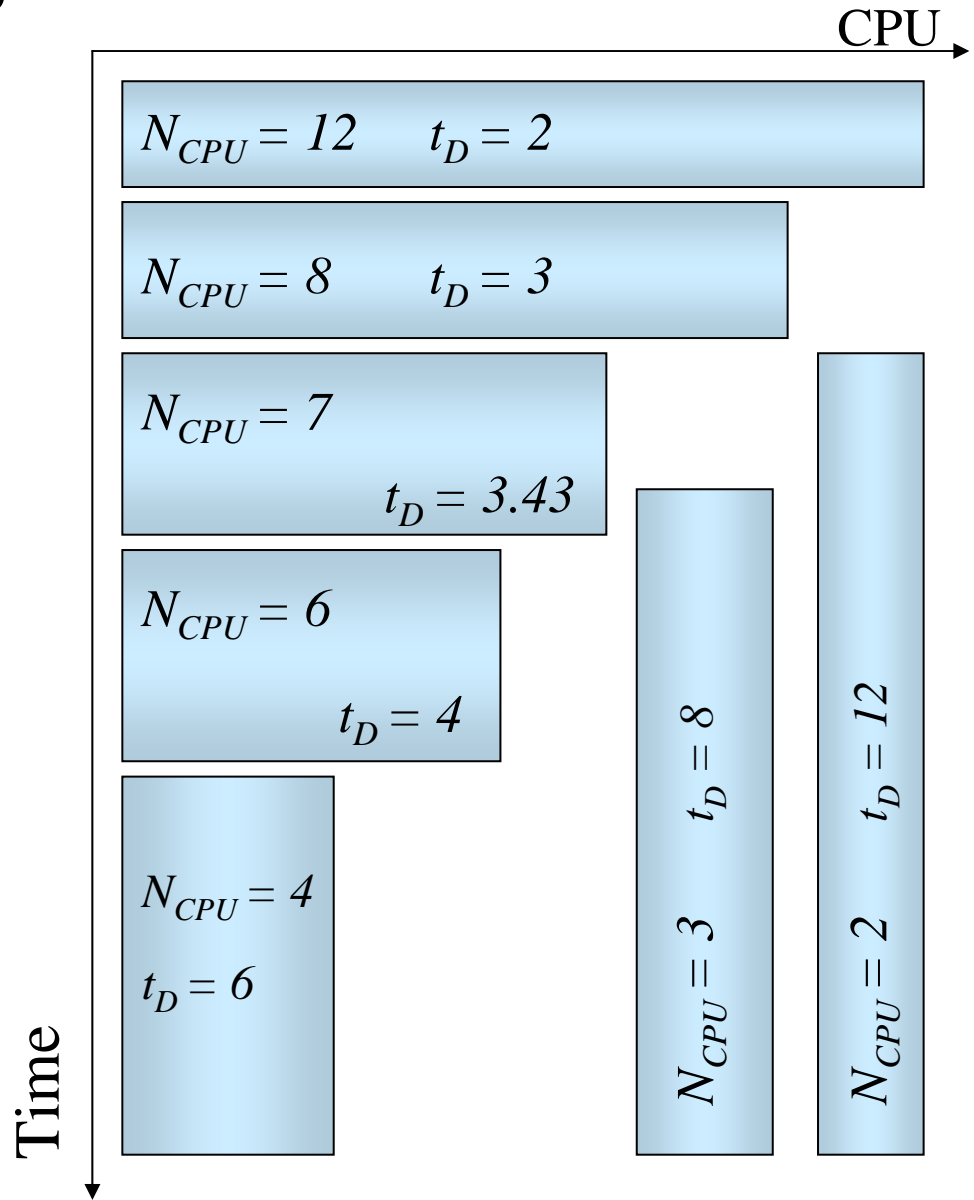


An Approach to Dynamic SLAs: Guarantee Terms as Functions

Variable Number of CPUs per Job

SLO: $N_{CPU} = \{2,3,4,\dots\}$

SLO: $t_D = \frac{24}{N_{CPU}}$





Dynamic SLAs - what & why

A Dynamic SLA:

An SLA which is not based on a single set of agreed terms.

(e.g., a contract with many ifs – if x, I'll pay a; if y, I'll pay b; ...)

So: Instead of specifying constraints as single terms, there is a set of different, interrelated terms that are equally acceptable to both parties and just one of these, if satisfied, it may lead to a successful SLA.

Advantages:

- They offer greater flexibility to the resource provider in managing the resource.
- They identify several possible needs from the user's perspective.

An Obvious Benefit:

- They minimize the number of re-negotiations needed in case of high resource loads.

Challenge:

- Specifying all possible acceptable terms may incur an additional overhead.

Viktor Yarmolenko, Rizos Sakellariou. "Towards Increased Expressiveness in Service Level Agreements". *Concurrency and Computation: Practice and Experience*, 2007. Special Issue: Middleware for Grid Computing.