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Some Aspects of the Workflow Scheduling in the Computing Continuum Systems

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Contemporary computing systems are commonly characterized in terms of data-intensive workflows, that are managed by utilizing large number of heterogeneous computing and storage elements interconnected through complex communication topologies. As the scale of the system grows and workloads become more heterogeneous in both inner structure and the arrival patterns, scheduling problem becomes exponentially harder, requiring problem-specifc heuristics. Despite several decades of the active research on it, one issue that still requires effort is to enable effcient workflows scheduling in such complex environments, while preserving robustness of the results. Moreover, recent research trend coined under term "computing continuum" prescribes convergence of the multi-scale comuputational systems with complex spatio-temporal dynamics and diverse sets of the computing continuum, especially for better understanding scheduling heuristics, as real systems do not preserve this quality and hinder the comparative performance analysis of the novel scheduling approaches. In this talk we will discuss how to approach this problem from simulation perspective, discuss important algorithmic and architectural aspects.

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Summary

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