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WS-VLAM workflow management system

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Printable Summary

WS-VLAM is workflow management system which aim to provide and support coordinated execution of scientific workflow on distributed Grid and Cloud resources. This system combines the ability to take advantage of the underlying Grid and Cloud infrastructures and a flexible high-level rapid prototyping environment. WS-VLAM can model the computatin of the workflow graph in two ways: as a stream-based network, and as data flow network. In the stream based network, workflow components stream data between each other in a peer-to-peer fashion this entails that workflow tasks are co-allocated on resources and streaming channels are setup between tasks, the stream-based approach covers applications where communication is time critical. In the second execution models the workflows as a data flow graph tasks can only execute once its data dependencies have been met which means that all preceding tasks have produced some data to the current task and therefore it has data present on all its input port. This allows the task to start execution. The dataflow approach is suitable for a wider spectrum of scientic application especially legacy file based applications where communication between tasks is based on les. In large, long running workflows, dataflow is instrumental for better resource usage since a task at the end of the workflow do not waist time idling waiting for data to be produced but instead are only submitted to resources upon data availability.

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