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Paper 124	
Title:	P*: A Model of Pilot–Abstractions
Paper:	PDF
Track:	Cyberinfrastructure to support eScience (Papers)
Keywords:	Distributed Computing Abstractions Pilot–Jobs SAGA
Abstract:	Pilot–Jobs support effective distributed resource utilization, and are arguably one of the most widely–used distributed computing abstractions – as measured by the number and types of applications that use them, as well as the number of production distributed cyberinfrastructures that support them. In spite of broad uptake, there does not exist a well–defined, unifying conceptual model of Pilot–Jobs which can be used to define, compare and contrast different implementations. Often, Pilot–Job implementations are strongly coupled to the distributed cyberinfrastructure they were originally designed for. These factors present a barrier to extensibility and interoperability. This paper is an attempt to (i) provide a minimal but complete model (P*) of Pilot–Jobs, (ii) establish the generality of the P* Model by mapping various existing and well known Pilot–Job frameworks such as Condor and DIANE to P*, (iii) derive an interoperable and extensible API for the P* Model (Pilot–API), (iv) validate the implementation of the Pilot–API by concurrently using multiple distinct Pilot–Job frameworks on distinct production distributed cyberinfrastructures, and (v) apply the P* Model to Pilot–Data.
Time:	Jul 18, 21:30 GMT

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