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On Demand, Policy Based Monte Carlo Production and Tracking, Leveraging Clarens, MonALISA and RunJob

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Abstract: We describe a set of Web Services, created to support scientists in performing distributed production tasks (e.g. Monte Carlo). The Web Services described in this paper provide a portal for scientists to execute different production workflows which can consist of many consecutive steps. The main design goal of the Web Services discussed is to provide controlled access for (multiple) set(s) of users in different roles (e.g. scientists, administrators, grid operators,···) to complex production workflows without the added trouble of updating, configuring, and patching these ever evolving applications and keep the users focused on their core tasks (running production), while experts at the Tier2 centers keep the software up to date. Once users execute a workflow they recieve a tracking number that is used to track the job status which is propagated through MonALISA. Job anomalies can be further investigated using the JobMon service.

The Web Services have been implemented inside the Clarens Web Service framework. This Python (and Java) based framework provides, amongst others, x509 authorization, access control and VO management for its services. The Web Services discussed in this paper re-use several of these Clarens components in providing access control and usage quotas. Initially the services described in this paper where developed to support users in Monte Carlo production activities, however due to their generic design, can be used to expose other (potentially complex) applications to users as will be shown in this paper.

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