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AGIS: The ATLAS Grid Information System

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In this paper we describe the ATLAS Grid Information System (AGIS), the system designed to integrate configuration and status information about resources, services and topology of the computing infrastructure used by ATLAS Distributed Computing (ADC) applications and services.

The Information system centrally defines and exposes the topology of the ATLAS computing infrastructure including various static, dynamic and configuration parameters collected both from independent sources like gLite BDII (Berkley Database Information Index), Grid Operations Centre Database (GOCDB), the Open Science Grid Information services (MyOSG), and from ATLAS specific ones like the ATLAS Distributed Data Management (DQ2) system and the ATLAS Production and Distributed Analysis (PanDA) workload management system.

Being an intermediate middleware system between clients and external information sources, AGIS automatically collects and keeps data up to date, caching information required by ATLAS, removing the source as a direct dependency for end-users, but without duplicating the source information itself: AGIS represents data objects in the way more convenient for ATLAS services, introduces additional object relations required by ATLAS applications, and exposes the data via the REST style API and WEB front end services. For some types of information AGIS itself has become the primary repository.

We describe the evolution and new functionalities of WEB and API services implemented to integrate AGIS with ADC applications and provide user-friendly native WEB interface to manage data. We will explain how the AGIS flexibility allows the definition of new services still not integrated in production in WLCG but already used by ATLAS for specific use cases. In particular, it concerns the definitions of the FAX storage federation, which is based on XrootD storage services, and redirectors organized with a precise ATLAS specific topology, stored in AGIS. Special attention is given also to the implementation of user roles and privileges allowed to separate access within user groups using AGIS in production. Introducing various user access groups makes the Information System a sustainable way to keep a global and coherent view of the whole computing infrastructure used by ATLAS.

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