WLCG transition from X.509 to tokens: Status and Plans

Since 2017, the Worldwide LHC Computing Grid (WLCG) has been working towards enabling token-based authentication and authorization throughout its entire middleware stack. Since the initial publication of the WLCG v1.0 Token Schema in 2019, work has been done to integrate OAuth2.0 token flows across the Grid middleware. There are many complex challenges to be addressed before the WLCG can be end-to-end token-based, including not just technical hurdles but also interoperability with the wider authentication and authorization landscape. This paper presents the status of the WLCG coordination and deployment work, and how it relates to software providers and partner communities. The authors also detail how the WLCG token transition timeline has progressed, and how it has changed since its publication.