

Using TITAN in Life Sciences

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Abstract

TITAN [1] is a software platform for managing workflows from deployment to execution in the context of Big Data applications. This platform is characterised by a design and operation mode driven by semantics at different levels: data sources, problem domain and workflow components. The proposed platform uses ontologies as the core element for meta-data management. TITAN used Big Data technologies in its architecture. Thus, Apache Kafka is used for the inter-component communication, Apache Avro for data serialisation and Apache Spark for data analytics. This project is being used in the EnBiC2-Lab (Environmental and Biodiversity Climate Change Lab) project as part of the LifeWatch ERIC ecosystem. This project addresses the challenge of creating a set of databases, tools and a Virtual Research Environment (VRE) to monitor and analyse the effects of Climate Change in a comprehensive way, through the integration of measures and results from five different perspectives: water, air, soil, fauna and flora. Thus, TITAN will be made available for the LifeWatch community as the Big Data VRE.

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References

1. Antonio Benítez-Hidalgo, Cristóbal Barba-González, José García-Nieto, Pedro Gutiérrez-Moncayo, Manuel Paneque, Antonio J. Nebro, María del Mar Roldán-García, José F. Aldana-Montes, Ismael Navas-Delgado: TITAN: A knowledge-based platform for Big Data workflow management. *Knowledge-Based Systems*, 232 (2021).