

TECHNICAL SPECIFICATIONS: VIVO

Description: VIVO is member-supported, open source software and ontology for representing scholarship. VIVO supports recording, editing, searching, browsing and visualizing scholarly activity. VIVO encourages research discovery, expert finding, network analysis and assessment of research impact. VIVO is easily extended to support additional domains of scholarly activity.

History: Originally developed at Cornell University in 2006, VIVO was expanded and promoted through an NIH grant to a consortium led by the University of Florida (2009-2012). VIVO became a Duraspace open technology in 2013, supported by an open community of members, developers and contributors.

Cost: Open source software, no charge. VIVO software is distributed under the terms of the BSD open source license.

Use case highlight: VIVO showcases the scholarly work of an institution, creating a profile for each scholar. Teaching, research and service are presented in structured detail suitable for analysis and research discovery. VIVO represents the full organizational structure of the institution, supporting insight into programmatic impact.

Architectural overview

VIVO is a Java application, using Tomcat and Freemarker templates for presentation. VIVO has a generic core, Vitro, a semantic web application, representing data using a collection of ontologies, with data stored in triple store, implemented using a relational database.

Service providers

VIVO has an active network of registered service providers who provided commercial support, training and site customization. <http://duraspace.org/service-providers/>

Technical aspects

Operating System: UNIX-like (ie, Linux, HP-UX), Mac OSX

License: BSD

Release version: 1.9, <http://vivoweb.org/download>

Documentation: <https://wiki.duraspace.org/display/V1-VODOCI9x/>

Other prerequisite software: JJava JDK 7/later, Apache Maven 3.0.0/later, Apache Tomcat 7/later, MySQL 5.7.13/later

Key features

Enterprise application: VIVO is a full enterprise application, capable of showcasing the work of institutions of all sizes. More than 140 sites in 24 countries use VIVO to provide consistent, open, shared information regarding the work of their scholars.

Semantic web: VIVO is a semantic web application. Its data is represented using a common, extensible data model consisting of ontologies and controlled vocabularies, providing a high degree of transparency and simplifying access and sharing of data. VIVO supports RDF in NT, N3, and TTL formats.

Built in query engine: VIVO supports SPARQL, the industry standard for querying triple stores. Using SPARQL, queries can be developed and executed to meet any data retrieval requirement

Built-in search engine: VIVO includes Apache Solr. Solr is an enterprise search server providing fault-tolerant, reliable, scalable, faceted access to VIVO data.

Built in ontology editor: VIVO includes the Vitro Ontology editor, supporting the management of all ontologies used in VIVO, including the ability to add classes, properties, and organize elements as needed to support local extensions to the VIVO data models.

Inference engine: The Vitro inference engine computes inferences from the ontology and maintains them in an inference graph, streamlining the creation of triples for all VIVO entities. API: The VIVO SPARQL API supports authorized querying and updating of the VIVO triple store from an application. Using the API, developers can access all VIVO data

Visualizations: VIVO includes an extensive collection of visualizations of scholarly activity, including co-author and co-funded network visualizations, a map of science at the personal, departmental, or institutional level, and a capability map for inspecting the connections of scholars and concepts.

Tools/plugin/theming: The VIVO community produces and supports a wide variety of tools for managing and using VIVO data. VIVO supports the OpenSocial framework for web plug-ins. VIVO is easily themed to meet the branding requirements of your institution.

Sign on: VIVO supports OAuth, Shibboleth and application sign-on technologies, integrating with the institutional identity management and access strategy.

Software development

Permissions: VIVO allows you to control permissions at the individual level, including support for proxy access. Profile information can be managed by the scholar, or the scholar's designate.

Languages: VIVO is internationalized and available in many languages.

Duraspace hosts a group of leading-edge open technology projects characterized by thriving, consensus-driven, developer communities, including governance and membership, that strive to produce high quality products that insure sophisticated access and management of durable digital information.

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