

Abstract

Contemporary biomedical research projects demand the processing of different kinds of data that are often managed by heterogeneous application-specific platforms. Consequently, there is a need for an integrative and convenient access to such systems that enables a cross-platform collection and analysis of biomedical data.

The objective of this thesis was to develop an overall Single Sign-On (SSO) system which offers researchers a simplified access to resources in different security domains by requiring only one authentication process (single login). Hence, researchers no longer need to remember various passwords for different applications.

The result of the assessment of existing SSO solutions and technologies was that federated SSO systems, such as the Liberty Project, meet the requirements of biomedical research platforms best.

The practical part of this thesis deals with the development of an overall SSO system for a particular biomedical research platform: the Platform for Biomedical Research (PBR). The resulting implementation is based upon open specifications defined by the Liberty Project and offers a secure infrastructure for identity-based interactions without compromising sensitive identity information. Finally, concepts for the effective integration of application-specific platforms into the PBR's SSO system are discussed and security aspects are highlighted.

Keywords: Single Sign-On, Liberty, SAML, Platform for Biomedical Research, XML