

Abstract

JMX for the Shibboleth Identity Provider

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Abstract der Projektarbeit

Shibboleth is a well established open source software package for web single sign-on across or within organizational boundaries. Shibboleth is based on the Security Assertion Markup Language (SAML) and is an important building block of the successful SWITCHaai identity federation (www.switch.ch/aai/).

Therefore the Shibboleth Identity Provider (IdP) has become one of the core services of the Information Technology (IT) departments at many universities which require monitoring and management facilities in order to guarantee high availability, security and reliability. Because the Authentication and Authorization Infrastructure (AAI) is **the** solution to authenticate and authorize users and is playing a major role in the field of accounting, there is a growing need of having access to detailed usage data.

The objective of the project thesis was to first to collect ideas for metrics and IdP management tasks, beneficial for the above-mentioned requirements. In order to structure and summarize those ideas, research papers and publications in the field of Federated Identity Management (FIM) monitoring were consulted and helped to create a top-down overview. The study of the literature clarified that the implementation of Java Management Extensions (JMX) is a relatively new approach and will probably have an impact on monitoring enterprise applications in the future.

As a proof of concept some of the collected ideas were implemented as Managed Beans (MBeans) in the Shibboleth IdP. To demonstrate the integration of the newly available status, usage and performance information into a monitoring framework, a reference setup with the industry standard monitoring system Nagios was accomplished.

The JMX functionalities added to the IdP as part of this project provide a wide range of new possibilities, from fine-grained metrics to powerful management tasks for individual IdP components!