



# Security Policy Distribution and Negotiation of Web Services using Web Services

<http://www.st.informatik.tu-darmstadt.de/ALIA>

## Bachelor / Master Thesis

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### Description

Web services enable the invocation of remote services (e.g. credit card validity check) over the Internet. The industry frequently uses Web service for implementing Business-to-Business (B2B) interactions. However, to enable the secure B2B interactions between different components, it is necessary that companies can express and negotiate security policies before establishing an interaction over the Internet.

Current Web services use the WS-SecurityPolicy standard to express security policies in form of XML documents, but each Web service client is responsible for negotiating the right security policy for an interaction. What is missing is a convenient infrastructure that facilitates policy negotiation.

The goal of this thesis is to implement a Web service infrastructure for security policy negotiation. This infrastructure needs to potentially support various technologies, programming languages, service based in different companies. For better negotiation results, we want to improve the process considering semantic and contextual information and by caching previous negotiation results.

The thesis work is in conjunction with the EMERGENT research project and the Software Cluster.

### Goals

- Using Java programming and XML skills in a research project
- Learning Web services and industry-strengthened policy languages
- Semantic improvement of policy negotiation results
- Implementation of a Web service for policy negotiation
- Publication of the projects results as an open source project
- (Optional) possible dissemination as a workshop article

### Recommended Reading

- WS-Security Policy: <http://docs.oasis-open.org/ws-sx/ws-securitypolicy/200512/ws-securitypolicy-1.2-spec-cd-01.pdf>
- Apache AXIS 2 Web Service Framework: <http://axis.apache.org/axis2/java/core/>
- Apache Rampart: <http://axis.apache.org/axis2/java/rampart/developer-guide.html>
- Software Cluster: <http://www.software-cluster.com/>

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